NORTHWEST ARCTIC SUBSISTENCE REGIONAL ADVISORY COUNCIL

Meeting Materials

October 28-29, 2019

Kotzebue

What's Inside

On the cover...

Crowberries on the Selawik National Wildlife Refuge.

USFWS photo

What's Inside

NORTHWEST ARCTIC SUBSISTENCE REGIONAL ADVISORY COUNCIL

Northwest Arctic Borough Assembly Room
Kotzebue

October 28-29, 2019
9:00 a.m. daily

TELECONFERENCE: call the toll free number: 1-877-638-8165, then when prompted enter the passcode: 9060609.

PUBLIC COMMENTS: Public comments are welcome for each agenda item and for regional concerns not included on the agenda. The Council appreciates hearing your concerns and knowledge. Please fill out a comment form to be recognized by the Council chair. Time limits may be set to provide opportunity for all to testify and keep the meeting on schedule.

PLEASE NOTE: These are estimated times and the agenda is subject to change. Contact staff for the current schedule. Evening sessions are at the call of the chair.

AGENDA

*Asterisk identifies action item.

1. **Invocation**
2. **Call to Order** (*Chair*)
3. **Roll Call and Establish Quorum** (*Secretary*).....4
4. **Welcome and Introductions** (*Chair*)
5. **Review and Adopt Agenda*** (*Chair*) 1
6. **Review and Approve Previous Meeting Minutes*** (*Chair*) 5
7. **Reports**

   Council Member Reports

   Chair's Report
8. **Public and Tribal Comment on Non-Agenda Items** (available each morning)
9. **Old Business** (*Chair*)

   a. Wildlife Closure Review WCR20-19 (Unit 23 muskox) – information update (*OSM Wildlife*) 19

   b. 805(c) Report – information update (*Council Coordinator*) 30
10. **New Business** (*Chair*)

    a. Wildlife Proposals* (*OSM Wildlife/Anthropology*) 32

10. Agency Reports

(*Time limit of 15 minutes unless approved in advance*)

a. Tribal Governments

b. Native Organizations and Alaska Native Corporations

c. U.S. Fish and Wildlife Service

Selawik National Wildlife Refuge Update (*Susan Georgette, Refuge Manager*)

d. National Park Service

Gates of the Arctic National Park and Preserve (*Marcy Okada, Subsistence Coordinator*)

e. Bureau of Land Management

f. Alaska Department of Fish and Game

g. Office of Subsistence Management

11. Future Meeting Dates*

12. Closing Comments

13. Adjourn (*Chair***)**

To teleconference into the meeting, call the toll free number: 1-877-638-8165, then when prompted enter the passcode: 9060609.

Reasonable Accommodations

The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for sign language interpreting services, closed captioning, or other accommodation needs to Zach Stevenson, 907-786-3674, zachary_stevenson@fws.gov, or 800-877-8339 (TTY), by close of business on October 11, 2019.

REGION 8
Northwest Arctic Subsistence Regional Advisory Council

Seat	Year Appointed *Term Expires*	Member Name and Community	
1	2018 ***2019***	**Tristen S. Pattee** Ambler	
2	2016 ***2019***	**Beverly M. Moto** Deering	
3	 ***2019***	***VACANT***	
4	2010 ***2019***	**Michael C. Kramer** Kotzebue	**Chair**
5	1995, 2017 ***2020***	**Raymond E. Lee, Jr.** Buckland	
6	2018 ***2020***	**Replogle Swan, Sr.** Kivalina	
7	1993, 2015 ***2020***	**Louie A. Commack, Jr.** Ambler	**Vice-Chair**
8	 ***2021***	***VACANT***	
9	2014 ***2019***	**Enoch L. Mitchell** Noatak	
10	2003, 2018 ***2021***	**Barbara M. Atoruk** Kiana	**Secretary**

NORTHWEST ARCTIC SUBSISTENCE REGIONAL ADVISORY COUNCIL
Meeting Minutes

April 9-10, 2019
Northwest Arctic Borough Assembly Rook
Kotzebue, Alaska

The meeting called to order at 9:06 a.m.

Invocations
Council Member Michael Kramer provided the opening invocation on April 9, 2019.

Call to Order *(Chair)*
Council Member Michael Kramer called the meeting to order. Seconded by Barbara Atoruk. The question called by Barbara Atoruk and approved unanimously by the Council.

Roll Call and Establish Quorum *(Zach Stevenson as requested by the Chair)*
Nine of town Council Members participated in the meeting including Michael Kramer; Barbara Atoruk; Louie Commack, Jr.; Hannah Loon; Enoch Mitchell; Beverly Moto; Tristen Pattee; and Silvano Viveiros, Sr. Replogle Swan was excused though participated by teleconference. Raymond Lee, Jr., did not attend.

Welcome and Introductions (*Chair*)
Council Member Michael Kramer welcomed meeting attendees and those participating by teleconference and invited participants to introduce themselves.

In Attendance:
The following individuals attended the meeting:
Lisa Maas, Wildlife Biologist, Office of Subsistence Management (OSM) (Anchorage)
Raime Fronstin, PhD, Wildlife Biologist, National Park Service (NPS), Western Artic National Parklands (WEAR) (Kotzebue)
Patricia Petrivelli, Subsistence Anthropologist, Bureau of Indian Affairs (BIA) (Anchorage)
Susan Georgette, Refuge Manager, Selawik National Wildlife Refuge (NWR), United States Fish and Wildlife Service (USFWS) (Kotzebue)
Charlie Gregg, Planning Department, Northwest Arctic Borough (Kotzebue)
Brendan Scanlon, Fishery Biologist III, Alaska Department of Fish and Game (ADF&G) (Fairbanks)
Brittany Sweeney, Outreach Specialist, Selawik NWR, USFWS (Kotzebue)
Bill Carter, Fisheries Biologist, Selawik NWR, USFWS (Kotzebue)
Maija Lukin, Superintendent, WEAR, NPS (Kotzebue)
Hannah Atkinson, Cultural Anthropologist, WEAR, NPS (Kotzebue)
Andrew Joseph Dallemolle, District Ranger, WEAR, NPS (Kotzebue)
Captain Rex Leath, Department of Public Safety, Alaska Wildlife Troopers – Northern Detachment (Anchorage)
Trooper Scott Bjork, Alaska Wildlife Troopers – Northern Detachment (Kotzebue)
Damon Schaeffer, Sr., Senior Director Lands and Facilities, NANA Regional Corporation, Inc. (Kotzebue)
Tom Sparks, Associate Field Manager, Bureau of Land Management (BLM) (Nome)
Daniel "Alex" Hansen, Wildlife Biologist III, ADF&G (Kotzebue)
Brandon Saito, Wildlife Biologist III, ADF&G (Kotzebue)
Hazel Smith, Fish & Game Regulatory Program Assistant, ADF&G (Kotzebue)
Walker Gusse, Ranger/Pilot, BLM (Anchorage);
Kirk Gregg, Lands Specialist, Lands Department, NANA Regional Corporation (Kotzebue);

Stacia Backensto, Wildlife Biologist and Outreach Specialist, Arctic Network Inventory and Monitoring Program, NPS (Fairbanks)
Pippa Kenner, Anthropologist, OSM (Anchorage)
George Pappas, State Subsistence Liaison, OSM (Anchorage)
Zach Stevenson, Council Coordinator, OSM (Anchorage).

Teleconference Line:
The following individuals participating in some or all of the meeting via teleconference:
Kyle Joly, Wildlife Biologist, Arctic Inventory and Monitoring Caribou Vital Sign Lead, NPS (Fairbanks)
Derek Hildreth, Permit Specialist, OSM (Anchorage)
Daniel Sharp, Wildlife Biologist, BLM (Anchorage)
Mark Burch, Wildlife Biologist IV, ADF&G (Palmer)
Daniel Gonzalez, Subsistence Resource Specialist I, Division of Subsistence – Northern Region, ADF&G (Fairbanks)
Marcy Okada, Subsistence Coordinator, Gates of the Arctic National Park and Preserve (NPP), NPS (Fairbanks)
Clarence Summers, Acting Subsistence Program Manager, NPS (Anchorage)
Tina McMaster-Goering, Project Manager, Ambler Road Environmental Impact Statement, BLM (Fairbanks).

Live Broadcast
The meeting was broadcast live on KOTZ Radio (720 AM/89.9 FM) and the KOTZ Radio website (https://kotz.org/index.html), reaching listeners in each of the region's eleven (11) communities including Kotzebue, Noatak, Kivalina, Noorvik, Selawik, Deering, Buckland, Kiana, Kobuk, Shungnak, and Ambler.

Review and Adopt Agenda* *(Chair)*
Zach Stevenson, Council Coordinator, explained that reports and presentations addressing wildlife would be delivered first to inform agenda item 11. New Business, c. Call for Federal Wildlife Proposals.

The Coordinator answered questions from Council Members indicated below and the noted the following modifications to the agenda:

1. Agenda Item 10. Old Business, a. Update on Emergency Wildlife Special Action WSA18-04 was removed by OSM. The timing for Unit 23 moose closure had passed.

2. Council Member Louie Commack requested to move agenda item 12 d. BLM Agency Reports, IV. Update on the Ambler Road Environmental Impact Statement (Ambler Road EIS) to item 11. New Business. Council Member Barbara Atoruk seconded the motion and called the question. The motion carried unanimously by the Council and the BLM report on the Ambler Road EIS moved to agenda item 11. New Business.

3. Mr. Stevenson responded to a question from Council Member Silvano Viveiros, Sr. and explained the public is invited and encouraged to share comments per agenda item 9. Public and Tribal Comment on Non-Agenda Items.

4. Mr. Stevenson responded to a point raised by Council Member Barbara Atoruk regarding adherence to Robert's Rules of Order. Mr. Stevenson explained that in the past strict adherence to Robert's Rules of Order caused challenges. Presently the decision making process is more flexible and requires a motion, justification, and vote.

5. Council Member Hannah Loon requested adding an agenda item addressing the local selection of Regional Advisory Council Members and noted the practice of conducting mandatory background checks might lead to lower numbers of applicants and that individuals improve themselves over time reconciling minor misdemeanors. Council Member Loon also requested adding an item to the agenda under 11. New Business providing an honorarium for Regional Advisory Council Member participation in meetings.

Council Member Michael Kramer made a motion to approve the agenda as modified. Seconded by Council Member Louie Commack, Jr. Council Member Michael Kramer called the question and the motion carried unanimously, approving the agenda as modified.

Election of Officers

Council Member Louie Commack, Jr. nominated Council Member Michael Kramer as Chair. The Council unanimously voted to elect Council Member Michael Kramer as Chair.

Council Member Barbara Atoruk nominated Louie Commack, Jr. as Vice Chair and made a motion, requesting unanimous consent from the Council to elect Louie Commack, Jr. as Vice Chair. Council Member Hannah Loon seconded the motion. Council Member Michael Kramer called the question and the Council unanimously voted to elect Council Member Louie Commack, Jr. as Vice Chair.

Council Michael Kramer nominated Council Member Barbara Atoruk as Secretary. Council Member Louie Commack, Jr. seconded the nomination of Council Member Barbara Atoruk as Secretary. Council Member Hannah Loon called the question, asking for unanimous consent to nominate Council Member Barbara Atoruk as Secretary. Council Member Michael Kramer seconded the motion. The Council unanimously voted to elect Council Member Barbara Atoruk as Secretary.

Review and Approval of Previous Meeting Minutes (*Zach Stevenson, OSM*)

Council Chair Michael Kramer made a motion to approve the minutes from the Fall 2018 Northwest Arctic Subsistence Regional Advisory Council Meeting.

Susan Georgette, Refuge Manager at the Selawik NWR, noted a correction was needed on the draft minutes. Susan said that on page 5 of the draft minutes the list of teleconference participants includes Tanya Ballot. Tanya was incorrectly listed as administrator at the Selawik NWR. She works for the Native Village of Selawik. This correction was noted.

Secretary Barbara Atoruk made a motion to approve the minutes from the fall 2018 Northwest Arctic Subsistence Regional Advisory Council Meeting. Vice Chair Louie Commack, Jr. seconded the motion to approve the minutes and called the question. The Council voted unanimously to approve the minutes as modified by Susan Georgette.

Reports

Silvano Viveiros, Sr. (Council Member)

Council Member Silvano Viveiros described a subsistence trip taken last spring to the Chamisso Island and Buckland Bay area. The trip required 70 gallons of gas and was successful, producing two *ugruk*.[1] Weather conditions resulted in rough seas on the return trip home and required more fuel. Council Member Viveiros mentioned spring hunting for brant (*Branta bernicla*) and geese, and fall season hunting for caribou. The caribou-hunting trip was unsuccessful, possibly due to timing. A friend provided his

[1] Ugruk is the Iñupiaq name for the bearded seal (*Erignathus barbatus*), an important subsistence resource in the Northwest Arctic region of Alaska.

family with several caribou.

Hannah Loon (Council Member)
Council Member Hannah Loon reported that last fall her daughter did not harvest a caribou despite having searched. There were no caribou available in Selawik until October. Loon added that fishing for Whitefish and blueberry picking were favorable. Loon noted that during the springtime people are fishing for Sheefish. There were few caribou in the communities of Noorvik, Kiana, and Ambler, while there were more in other areas.

Barbara Atoruk (Council Member)
Council Member Barbara Atoruk expressed enthusiasm for returning to serve on the Northwest Arctic Subsistence Regional Advisory Council after 30 years of experience working with State and Federal employees. She now lives in Kiana. Atoruk reported that caribou have not migrated through Kiana for the past two years. Younger hunters in Kiana provided caribou for families and elders who did not harvest any caribou, however. Atoruk also reported that fishing for Sheefish, salmon, and Whitefish has been favorable. A few tomcod were harvested because of the lack of snow that prevented overland travel and fishing.

Louie Commack, Jr. (Council Member)
Council Member Louie Commack, Jr. reported a lack of caribou in Ambler during the fall hunt. There was an abundance of fish, with many people fishing for salmon, Whitefish, and Burbot. Commack added that caribou were crossing the Ambler River two weeks ago and migrating near the communities of Shungnak and Kobuk where people hunted them.

Beverly Moto (Council Member)
Council Member Beverly Moto reported the marginally successful harvest of caribou in Deering this year. There was a lack of snow and no sea ice in front of Deering for most of the year, otherwise people were pleased with the results of hunting and fishing.

Tristen Pattee (Council Member)
Council Member Tristen Pattee reported for several people in Ambler and Shungnak who noted concern regarding the later than usual return of caribou to the area. Residents also expressed concern about the possibility of becoming criminals for hunting caribou after the season closes due to the late return migration of caribou and hoped for leniency when hunting to feed their families. Pattee asked whether an emergency open season could be used to help people seeking to harvest caribou. Wolves are changing the migration pattern of caribou, emphasizing the need for predator control. Hunters are traveling farther to be able to harvest meat. It is becoming cost prohibitive at $12.00/gallon for gasoline to participate in subsistence hunting. The harvest of Sheefish and berries was favorable. A resident of Shungnak expressed concern regarding the hunting of caribou in the water by boat. Some people will shoot at caribou while they are crossing the river preventing other hunters from harvesting caribou when they cross the river. Another Shungnak resident reported aircraft flying too low near the hot springs. A resident of Ambler expressed a public safety concern about the river becoming congested with hunters while caribou are crossing the river. Pattee said that he didn't observe any caribou last season, though he was successful in harvesting moose, which he distributed throughout the community in addition to distributing meat donated by sport hunters.

Michael Kramer (Council Member)
Council Member Michael Kramer welcomed new Council Members Silvano "Pookie" Viveiros, Sr., Tristen Pattee, and Replogle Swan. Kramer was unable to go ugruk or moose hunting this spring due to a weeklong work-related travel commitment in Seattle and Anchorage. He has been processing Sheefish and Herring. Kramer reported numerous searches for caribou and frenzied hunting for caribou. The caribou migrated slowly, and hardly any caribou migrated near the communities of Ambler and Kobuk.

Kramer observed two young bull moose but did not harvest a moose and submitted his RM 880 permit report (state moose harvest ticket) as required. He harvested two caribou near Callahan, while several thousand caribou were sighted near Callahan. He did not go trapping this past winter but heard numerous reports of open water disrupting winter subsistence hunting and affected numerous species. Kramer added that he hopes Dall sheep survived the winter; winter weather conditions were mild.

Zach Stevenson, OSM Council Coordinator, welcomed and acknowledged the new Council Members:

- Replogle Swan, who won the Alaska Federation of Natives *Hunter of the Year Award* and served as the Search and Rescue Coordinator in Kivalina;
- Silvano Viveiros, Sr., who served as the search and rescue coordinator for the Northwest Arctic Borough, and is a small business owner and active hunter;
- Barbara Atoruk, who has much experience working on subsistence and regulatory issues and previously worked for OSM; and
- Tristen Pattee, a hunter, business owner, and employee at the Red Dog Mine.

Stevenson said that representatives from the Selawik NWR will provide an update from the December 2018 Western Arctic Caribou Herd Working Group Meeting held in Anchorage. He attended a meeting of the Northwest Arctic Conservation Law Enforcement Working Group yesterday in Kotzebue. The Council will receive an update on the meeting from the partner agencies that facilitated that meeting. Mr. Stevenson invited public or tribal comments on non-agenda items.

Public and Tribal Comments on Non-Agenda Items

Damon Schaeffer, Sr., Senior Director Lands and Facilities, provided a report on behalf of NANA Regional Corporation, Inc. and introduced Kirk Gregg, Lands Specialist in the Lands Department, also with the NANA Regional Corporation. The NANA Trespass year-end report was provided at the Council's fall 2018 meeting. Mr. Gregg read a passage from the report by Larry Westlake, Sr., who serves on the Kiana Elder's Council. Schaeffer acknowledged recent efforts teaching others how to achieve hunter success and build bridges, helping communities work together and develop partnerships to protect the subsistence way of life. Mr. Gregg added that Mr. Westlake served in the Army National Guard for 18 years and has a strong commitment to his family and the region. An award was given to Mr. Westlake at a subsistence committee meeting in Kotzebue to honor his leadership and public service. The award was previously provided in memory of Raymond Stoney, with the approval of his family, in memory of Mr. Stoney's lifetime work to preserve Iñupiaq culture, lands, and resources. Mr. Gregg mentioned the Northwest Arctic Conservation Law Enforcement Working Group goal of hiring more officers and working with land managers to provide a better response to local concerns. Council Secretary Barbara Atoruk expressed her appreciation to Mr. Gregg for these efforts.

Council Chair Michael Kramer asked to hear agenda item 11; specifically, the report from the BLM, previously item 12 B on the agenda. Responding to a question from Clarence Summers, Stevenson clarified that per Council Member Commack's request, agenda item 12D under BLM Agency Reports, had been moved to agenda item 11A, New Business, and would be addressed by Tina McMaster-Goering, BLM Project Manager for the Ambler Road Environmental Impact Statement in Fairbanks. Stevenson explained the he received a message from McMaster-Goering indicating she was in another meeting but would be available at 11:00 a.m. to share her report with the Council. Kramer said the BLM report would be delivered later. The Council then addressed agenda Item 11 under New Business: Wildlife Closure Review WCR18-19 (Unit 23 SW muskox).

New Business

a. Wildlife Closure Review WCR18-19 (Unit 23 SW muskox)

OSM Wildlife Biologist Lisa Maas provided an overview of Wildlife Closure Review WCR18-19 regarding Unit 23 southwest muskox. Maas explained that the purpose of the wildlife closure review is to provide the Council an opportunity to decide whether to submit a proposal to change or modify a closure, or maintain the status quo. The process begins with the Council. Instead of submitting a proposal, the Council makes a recommendation on the closure review. This information is submitted to the Federal Subsistence Board (Board) for final action. If the Council recommends a change, it is reflected in the closure review analysis by OSM.

This Wildlife Closure Review addresses the closure of muskox hunting in the southwestern portion of Unit 23 to non-Federally qualified users. Muskox were reintroduced to the Seward Peninsula in 1970. By 1995, the muskox population had grown enough to allow an unlimited hunt and the Board established a muskox hunt on the Seward Peninsula that included Unit 23 south of Kotzebue Sound and west of, and including the Buckland River drainage, referred to as Unit 23 southwest. Approximately 10-13 percent of the total Seward Peninsula population (approximately 2,015 muskox) live in the Unit 23 southwest area. The ratio of 20 mature bulls per 100 cows is considered the minimum bull to cow ratio; though, 19 mature bulls per 100 cows were observed in 2017. Between 1995 and 2017, the harvest ranged from 0 to 18 muskox per year. The harvestable surplus in Unit 23 southwest is low. The OSM recommendation was to maintain the status quo. Maintaining the closure was considered necessary to conserve muskox and provide subsistence opportunity and rural priority. Council Member Swan requested additional information on muskox harvest in and around Kivalina.

Raime Fronstin, NPS Wildlife Biologist, responded to Mr. Swan's request and stated that two permits were issued for Cape Krusenstern National Monument last year and two muskox were harvested. Swan asked the location of where the muskox were harvested because he wanted to be sure muskox were available near Kivalina. Council Members Loon and Moto stated that muskox are perceived as a nuisance and threat to public safety. Council Members Loon and Atoruk requested comments from the Council Member representing Buckland. Stevenson, Council Coordinator, explained that Council Member Lee of Buckland had not been seen at the meeting and could not be contacted. Council Member Viveiros made a motion to postpone a vote on Wildlife Closure Review WCR18-19 until the next day when, hopefully, Member Lee arrives. Council Member Atoruk seconded the motion. The Council voted unanimously to postpone the vote on Wildlife Closure Review WCR18-19.

b. Update on the Ambler Road Environmental Impact Statement[2] (Tina McMaster-Goering, BLM Project Manager for the Ambler Road EIS)

Per the request of Vice Chair, Louie Commack, Jr., the BLM provided a report on the Ambler Road Environmental Impact Statement (EIS) and Section .810 Analysis under agenda item 11. New Business. Vice Chair Commack asked if the Ambler Road could increase hunting pressure in the Northwest Arctic region as occurred on the Dalton Highway. Captain Leath responded that this issue had been raised before. Alaska Wildlife Troopers would like to know if the road would be open to all the public because they presently lack enough staff to patrol the Ambler Road should it open for public access. He emphasized that law enforcement cannot handle such a large influx of people. Vice Chair Commack said the decision must involve local participation and that local decision makers need data to support the decision-making process. Bill Headman, Assistant Field Manager with the BLM Central Yukon Field Office, addressed the Council and said that the BLM Central Yukon Field Office is the lead agency for the Ambler Road EIS. He provided an update on the process saying that the draft EIS would be available in

[2] This item was moved to 11:00 AM on April 9, 2019 due to the limited availability of Tina McMaster-Goering, Project Manager, Ambler Road Environmental Impact Statement, BLM – Fairbanks.

July, followed by a 45-day review period for public comment. The final EIS is expected in October with a Record of Decision in November. Headman reviewed the four alternatives; and described the Section 106 process that addreses cultural resources; Section 810 evaluation impacts to subsistence users; and consultation with 62 tribal governments and 23 Alaska Native Corporations.

The Council expressed concern for not being provided with maps to illustrate the alternatives. Council members asked what is being proposed and where, specifically wanting to know how construction would impact subsistence use areas, hunting grounds, and sacred sites. The Council unanimously voted to establish a working group to review the EIS and 810 evaluation.

c. Wildlife Reports/Resource Reports

i. Law Enforcement Update

Captain Rex Leath, Department of Public Safety, Alaska Wildlife Troopers – Northern Detachment, introduced law enforcement officers and others representing the Northwest Arctic Conservation Law Enforcement Working Group, including Trooper Scott Bjork, Walker Gusse, BLM Ranger/Pilot, Andrew Joseph Dallemolle, NPS District Ranger, and Damon Schaeffer, Sr., NANA Director Lands and Facilities. Captain Leath explained the purpose of the Northwest Arctic Conservation Law Enforcement Working Group is to coordinate information sharing and public concerns with participating agencies. The group acknowledged persistent local concerns regarding user conflicts pertaining to caribou in Unit 23. Captain Leath noted the goal of creating a centralized phone number that everyone can call to provide law enforcement reports and receive rapid responses from the appropriate agency. Council Member Pattee asked about the process used for responding to trespass incidents. Captain Leath and Trooper Scott Bjork explained that someone trespassing on private property must first be notified that they are on private property without permission. The Council unanimously agreed to submit a letter to the Alaska Wildlife Troopers endorsing efforts to reduce disturbances to the migration of the Western Arctic Caribou Herd through the development of a centralized and spatially explicit law enforcement reporting geodatabase.

ii. Western Arctic Caribou Herd Report (Daniel "Alex" Hansen, ADF&G Wildlife Biologist)

Daniel "Alex" Hansen provided a report on the Western Arctic Caribou Herd. The latest photo census was conducted in 2017. Weather conditions prevented a follow-up photo census in 2018. Another photo census is planned for the summer of 2019. The most current information showed 259,000 caribou in 2017, reflecting an increase of 201,000 caribou from 2016. The 2016/2017 adult female survival was approximately 84 percent, indicating growth of the Western Arctic Caribou Herd. The 2017/2018 overwinter survival was likely lower than expected and caused the population to decline slightly. However, calf recruitment has been high since 2016 with 23 calves per 100 adults in 2017; 22 calves per 100 adults in 2017; and 21 calves per 100 adults in 2018. This survey will take place again in April 2019.

Mr. Hansen addressed the population trajectory for the herd and stated that if adult mortality is high and calf recruitment is low, then a population decline is expected. Conversely, if calf recruitment is high and adult cow mortality is low, this is an indicator of population growth. Overall, slight growth in the population was observed followed by increased mortality of adults that resulted in confusion of the survey results. Hansen said that ADF&G plans to launch another survey to update population numbers.

Calf production in 2017 and 2018 was high, indicating good herd health overall. A neonate study is now in its second year to gather information to help understand the factors influencing the survival of caribou calves. In 2018, brown bear predation decreased on the calving grounds, possibly because bears were not around at that time. Unknown causes of mortality would be examined when the snow melts.

Changes in the fall caribou migration patterns present challenges for local communities, according to Hansen. Caribou have been monitored with radio telemetry since 2014 when about 40 caribou were collared at Onion Portage. Additional caribou were collared in 2015 (~45); 2016 (>30); and in 2017 and 2018, seven caribou were collared at the Kobuk River. The number of functional radio collars decreased dramatically because of winter mortality reducing the value of this monitoring strategy. Alternative methods to collaring caribou are being examined. Radio telemetry is still considered an important tool that provides information needed to estimate calf production and recruitment; fall composition surveys; survival; and population estimates.

Hansen gave the results of a net gun capture project conducted last week near the Red Dog Mine, where 30 cow caribou and one bull were captured with minimal loss of animals. The composition surveys showed an increase between 2016 and 2017 from 41 bulls per 100 cows to 54 bulls per 100 cows. The ADF&G objective is to maintain a bull cow ratio of 40 bulls per 100 cows. Another composition survey is planned for next October; dates are yet to be determined. Hansen answered questions from Council Members pertaining to the changing migration pattern of the Western Arctic Caribou herd and the potential impacts of climate change on the phenology of the migration.

Brittany Sweeney, Outreach Specialist for Selawik NWR, said the refuge newsletter talks about the status of the herd and what happened at the December 2018 WACH Meeting in Anchorage. The Western Arctic Caribou Herd Management Plan has shifted from conservative to preservative management in an attempt to reduce local harvest by a certain percentage. The Working Group also adopted a position to oppose the Ambler Road. The Working Group did not discuss regulatory proposals because a more current population count had not been conducted.

iii. Wildlife Report, GMU 23 (Brandon Saito, ADF&G Wildlife Biologist)

Brandon Saito delivered a Wildlife Report for GMU 23, beginning with an overview of a moose survey conducted in the Upper Kobuk River drainage, where they observed 21 calves per 100 adults; 27 bulls per 100 cows; and a total 601 moose. This represents a four percent annual decrease since 2014, when the population count was 727. This spring 23 calves per 100 adults were counted. Though the moose population is declining overall, the number of calves observed is good news.

The Council unanimously made a motion to submit a Special Action to express concern over the declining moose population in Unit 23. The Council requested eliminating the cow moose season for the 2019/2020 regulatory year to conserve cow moose and help recover the Unit 23 population. This Special Action would also align State and Federal seasons and harvests limits, reducing user confusion. Requiring a State registration permit would improve harvest reporting and provide better harvest data.

The Council deliberated a proposal introduced by the Kotzebue Sound Fish and Game Advisory Committee that sought to allow the harvest of orphaned caribou calves, noting their prevalence and low survival rate. The Council rejected the proposal because traditional values do not support the harvest of caribou calves.

iv. Wildlife Report, Western Arctic National Parklands (Raime Fronstin, NPS Wildlife Biologist)

Raime Fronstin provided a report on Dall sheep, muskox, caribou, moose, and brown bears. The Dall sheep population in the Central DeLong Mountains and Trail Creek area declined, while numbers for the Baird Mountains area appear stable. The next muskox survey will be conducted in July 2019.

Survival estimates for muskox from 2018 indicate a four percent decline in the Cape Thompson population over the years 2011 to 2018, attributed to low yearling survival. NPS and ADF&G biologists

reviewed the muskox composition survey data and determined a sustainable harvest quota. In 2018, an estimated five muskox could be taken, of which three permits went to the State of Alaska and two permits went to the Federal government for Cape Krusenstern National Monument. The 2019 muskox surveys were recently completed and population estimates are expected soon.

A brown bear survey was conducted in 2018 for Gates of the Arctic NPP. These surveys are done every year and rotate by park; 2019 is an off year; therefore, the next survey will take place in the region the following year. Fronstin answered questions from Council Members about brown bear and Dall sheep population densities, concerns over potential human interaction with bears and wolves, and predator management.

v. Subsistence Resource Commission Report, Western Arctic National Parklands

Hannah Atkinson, NPS Cultural Anthropologist, provided a Subsistence Resource Commission (SRC) Report for Cape Krusenstern and Kobuk Valley. The SRC meetings were rescheduled to May 15 due to the winter 2019 lapse in Federal funding. Membership composition, time format, and the objectives for standard two-day SRC meetings was discussed. Atkinson also explained how the SRCs review all proposals developed by the Councils and provide comments regarding impacts to subsistence uses for communities represented by the SRCs.

vi. Wildlife Report, Gates of the Arctic National Park and Preserve (Kyle Joly, NPS Wildlife Biologist)

Kyle Joly provided a brief overview of the Park Service caribou radio collar monitoring program since 2010 in the Kobuk River area. He addressed questions from Council Members regarding the later timing of the migration and the potential impacts of the Red Dog road on deflecting the migration of caribou.

vii. Subsistence Resource Commission Report, Gates of the Arctic NPP

Representatives from the NPS requested to postpone the SRC report from the Gates of the Arctic NPP until the second day of the meeting with the Council's approval, address agenda item 11.3, and movement of caribou in the Noatak area. The Council recessed for a brief break. When the Council reconvened, Mr. Fronstin provided a wildlife report on behalf of the WEAR that addressed several species of importance to Federally qualified subsistence users in the Northwest Arctic region, including caribou, moose, Dall sheep, muskox, and brown bears.

Brandon Saito noted plans to collect additional radio collar data from caribou in the region, including mortality rates attributed to predation.

Marcy Okada, Subsistence Coordinator with the Gates of the Arctic NPP, provided an update on the Dall sheep survey. The population estimates are stable compared with previous years. Okada added that the Dall sheep biologist position is presently open and they hope to it filled by fall 2019. The Gates of the Arctic SRC met on November 13-14. A key topic for discussion by Dr. Todd Brinkman of the University of Alaska-Fairbanks was the Ambler Road; specifically, research examining human development and environmental impacts to traditional wildlife harvest practices. Okada stated that Gates of the Arctic NPP must conduct an environmental and economic analysis (EEA) that addresses the environmental, social, and economic impacts to resources and rural and traditional lifestyles, including subsistence activities. The EEA addresses potential impacts to caribou; fish; subsistence; permafrost; hydrology; wetlands; archeology; visitor experience; Wild and Scenic rivers; and water quality. Gates of the Arctic NPP is streamlining the EEA process and plans to release the draft in mid-July to coincide with the BLM's draft EIS release. There will be a 60-day public comment period. Okada addressed concerns regarding public

access to the Ambler Road, specifically noting the Alaska Industrial Development and Export Authority right-of-way permit application currently states that access to the road would be controlled and primarily limited to mining related industrial uses. Some commercial uses might also be allowed under a permit process. The application is being reviewed in this context. If there is a request for public access in the future, the NPS will treat it as a new task and conduct an appropriate level of review at that time.

Member Loon asked where people living near Anaktuvuk Pass hunt for caribou and whether they may use all-terrain vehicles to hunt. Okada explained that the Anaktuvuk Pass area has two caribou herds—the Teshekpuk and Western Arctic Caribou herds. Hansen added that the Anaktuvuk Pass area also has caribou from the Central Arctic herd and use of all-terrain vehicles is the option of the landowner or land manager(s).

viii. Board Support report (Hazel Smith, ADF&G Regulatory Program Assistant)

Hazel Smith provided an overview of the ADF&G Board Support program and an update from the recent Advisory Committee (AC) meetings; specifically, the six ACs on the Seward Peninsula, including the Northern Seward Peninsula (Kotzebue and Deering); Kotzebue Sound AC; Northern Norton Sound AC; Lower Kobuk (Noorvik, Kiana, and Selawik); and Noatak/Kivalina AC. Smith reviewed Alaska Board of Gam and Board of Fish proposals relevant to the region that addressed caribou calves; the bull moose season; and jurisdiction for king crab in Kotzebue Sound. Smith noted that Brandon Scanlon worked with some of the ACs to assist with fish proposals and that the Norton Sound region had submitted proposals addressing their crab fishery and Salmon Management Plan, which changed recently. The Noatak/Kivalina AC meets seasonally due to the limited availability of members. The Joint Board meets occasionally and discussed considerations raised by AC members regarding Council names and quorum requirements.

d. Call for Federal Wildlife Proposals*

Lisa Maas, OSM Wildlife Biologist, announced the Call for Federal Wildlife Proposals. The Council initiated a Federal special action to eliminate the Unit 23 cow moose season for the 2019/20 regulatory year to help recover the Unit 23 moose population. This would also align State and Federal seasons and harvests limits and help reduce user confusion. The Council added that requiring a State registration permit would improve harvest reporting and provided better harvest data.

Mr. Fronstin reported a declining sheep population in the Delong Mountains and Trail Creek area; the process for determining musk ox harvest levels; and on additional wildlife research. Mr. Fronstin also answered questions from Council Members regarding the density of brown bears in the region. Council Chair Mike Kramer expressed concern for the decline in Dall sheep and frustration for a perceived lack of action from the Federal agencies to address the issue. He emphasized the need for Federal land managers and local hunters to actively manage and control predators to help recover the sheep population. Mr. Kramer said the abundance of bears in the region is a threat to public safety and nuisance to local hunters and fishers, especially when brown bears damage property or feed on fish that have been processed and are drying.

The Council initiated a Federal proposal to allow subsistence users to harvest young bull caribou in Unit 23 to reduce harvest pressure on cows. The Council noted the timing of the caribou migration has changed, with caribou migrating later in the year when only the cow caribou season is open. The Council believes that eliminating the bull caribou closure would also reduce pressure on Federally qualified subsistence users who spend a lot of time and money for fuel to access hunting areas to harvest caribou.

Member Commack made a motion to move the BLM report on the Ambler Road Environmental Impact Statement and Section .810 ANILCA Evaluation of Subsistence Impacts to New Business. Marcy Okada reported that Tina McMaster Goering was delayed and that Marcy would provide her presentation.

e. Council Charter Review*

Zach Stevenson provided an overview of the Council Charter and explained that it provides the rules that guide the running of Council Meetings and the organization of the Council. He added that now is time for the Council to recommend any changes. Council Member Loon asked when the Council last reviewed the Charter. Council Member Atoruk said the Council reviews the Charter annually. Chairman Kramer requested ten minutes for the Council to review the Charter. The Council requested no changes to the Charter.

f. Approve FY2018 Annual Report*

The Council requested the following modifications to the FY 2018 Annual Report: 1) Under The ADF&G change the minutes to reflect that ADFG did not conduct the census of the Western Arctic Caribou Herd due to weather conditions; and 2) Add the Chair's signature to the minutes. Council Member Silvano Viveiros, Sr. made a motion to approve the FY 2018 Annual Report as modified. Council Member Barbara Atoruk seconded the motion. The Council voted unanimously and approved the FY 2018 Annual Report as modified. Council Chair Michael Kramer suggested modifying the FY 2018 Annual Report to reflect the weather conditions that delayed ADF&G in conducting a population count for the Western Arctic Caribou Herd. Council Member Viveiros Sr. made a motion to approve the FY 2018 Annual Report with the modification. Secretary Barbara Atoruk seconded the motion. The council voted unanimously to approve the FY 2018 Annual Report as modified.

g. Review of Statewide Finfish Fisheries Proposals of interest to the Council*

George Pappas, OSM, reported on Statewide Finfish Fisheries Proposals of interest to the Council. Of the 120-130 proposals addressed by the BOF there was no proposal that addressed catch and release in the Northwest Arctic region. Pappas explained that the BOF operates on a three-year cycle and will accept proposals to change local regulations in two years if the Council wishes to submit a proposal. He added that the deadline for submitting proposals to address fisheries in public waters will be next spring.

Agency Reports

a. BLM
   i. Update on the Bering Sea-Western Interior (BSWI) Draft Resource Management Plan/Environmental Impact Statement (RMP/EIS);
   ii. BWSI RMP/EIS 90-day public comment period;
   iii. BWSI RMP EIS ANILCA Section 810 Analysis and comment period;
   iv. Update on the Ambler Road Environmental Impact Statement (Ambler Road EIS); and Ambler Road Section 810 Analysis

b. ADF&G

Beth Mikow, ADF&G, was unavailable to attend the meeting. Refer to the summary reports above provided by Daniel "Alex" Hansen, Brandon Saito, and Hazel Smith.

c. Tribal Governments

There were no Tribal Government reports delivered at the meeting or by teleconference.

d. Native Organizations & Alaska Native Corporations

There were no Native Organizations and/or Alaska Native Corporation reports delivered at the meeting or by teleconference.

e. NPS

Superintendent Maija Lukin said the cultural resources update was provided by Justin Junge, Archaeologist, and covered Cape Krusenstern National Monument; Noatak National Preserve; Kobuk Valley NP; and Bering Land Bridge NP. Hannah Atkinson, Cultural Anthropologist, answered questions pertaining to the cultural resources update. Superintendent Lukin described the size; history; enabling legislation; location; and unique biological and cultural resources, and landmark features of each of the parks' in the WEAR. Superintendent Lukin emphasized the NPS is the largest Federal land manager in the Northwest Arctic Region and that many of these lands are closed to non-locals. The concession activity report circulated to Council Members provided information on daily visitors and commercial activity; specifically, transporters and guides.

Raime Fronstin, Wildlife Biologist, under direction from Superintendent Maija Lukin, circulated a commercial activity use and concessions activity report for all three parks and provided comments addressing correspondence submitted by the Northwest Arctic Subsistence Regional Advisory Council to the WEAR.

Stacia Backensto delivered a report about the seabird die-offs along the coasts of Bering Land Bridge NP and Cape Krusenstern National Monument featured. Backensto also gave a report on the long-term monitoring efforts on climate, coastal erosion, lake drainage and loons on the Seward Peninsula. She described the objectives of the long-term monitoring program as a means for checking the health of fish, birds, and wildlife, and landscapes required for survival in five Arctic Parks, including Gates of the Arctic NPP; Noatak NP; Kobuk Valley NP; Cape Krusenstern National Monument; and Bering Land Bridge NP.

Backensto shared information from Pam Suzanne, climate scientist, who noted warmer winter temperatures in western Alaska that resulted in record low sea ice levels. The March temperature in Kotzebue was 9.5 degrees Fahrenheit warmer than the past 90 years. A warmer, wetter spring season is expected in Interior Alaska. Another research partner observed changes in lakes in the region last summer; specifically, the draining of nineteen lakes in the Bering Land Bridge NP. The drained lakes provided nesting areas for Yellow-billed loons. The Western Arctic Parklands and the southern Area of Kobuk Valley might experience more lakes draining in the future with potential affects to wildlife and wildfire. Backensto concluded that phenology in the Parks is changing.

f. USFWS

Susan Georgette, Refuge Manager for Selawik NWR, delivered a report noting the role of refuge staff and emphasized their local knowledge and Alaskan experience. Selawik Refuge, founded in 1980 through ANILCA, is one of 500 refuges in the country that exist to conserve America's fish and wildlife for present and future generations. The refuge purposes for Selawik Refuge include conservation of the

Western Arctic Caribou Herd, migratory birds, Sheefish, and salmon; providing for subsistence opportunity; and protecting water quality. The refuge offers a variety of scientific, biological, and education projects to the public, some in partnership with other agencies.

Two parties of seven non-Federally qualified subsistence users harvested two moose and no caribou on the Refuge this year. By comparison, in 2000, 154 non-Federally qualified subsistence users hunted in the Refuge. Bill Carter, Fisheries Biologist, described ice measurements and an eight-year-long Sheefish research project in Selawik. The project started following a large thaw slump in the Upper Selawik River. The project focused on examining whether the thaw slump affected the recruitment of young Sheefish. A more detailed presentation of this research project will be shared at the Northwest Arctic Subsistence Council fall meeting. Carter noted that Sheefish can live to be 41 years old and spawn multiple times.

Brittany Sweeney, Outreach Specialist, reported on the Western Arctic Caribou Working Group (Working Group) meeting held in Anchorage in December 2018. No change was made to the status of the Western Arctic Caribou Herd plan. A newsletter provided to the Council contains the summary. Sweeney said the refuge took a formal position opposing the Ambler Road, as noted in the newsletter, citing concern for potential adverse impacts to the Western Arctic Caribou Herd. The Working Group supported a proposal submitted by the Kotzebue Advisory Committee seeking to eliminate the bull caribou closure.

g. OSM

George Pappas, OSM, provided a staffing update; discussed impacts of the December 22 - January 25, 2019 furlough and the need for Council Members to obtain a driver's license that is compliant with the Department of Homeland Security REAL ID by October 1, 2020.

Pippa Kenner, Anthropologist, provided a report on the Partners for Fisheries Monitoring Program (Partners Program) for the 2020-2023 cycle. The purpose of the Partners Program is to provide funding for biologists, social scientists, or educators in Alaska Native and nonprofit organizations to increase the organization's ability to participate in Federal Subsistence Management. Fourteen proposals were received for Partners Program funding this year. It was unclear whether an application for a Partners Program project was submitted for the Northwest Arctic Region. Kenner explained the Review Committee had not yet met. The Federal Subsistence Board will take action on current regulatory cycle proposals the second week in April 2019. The Fisheries Resource Monitoring Program (FRMP) funds projects to gather information to help manage and conserve subsistence fishery resources in Federal waters in Alaska. For the 2020 funding cycle, an estimated $1.5 million will be available for the first year for new projects. Once proposals are received, the next step is for a technical review committee to review them.

Future Meeting Dates*

The Council voted unanimously to hold the Fall 2019 Northwest Arctic Subsistence Regional Advisory Council Public Meeting on October 28-29 in Kotzebue. The Council voted unanimously to hold the winter 2020 Northwest Arctic Subsistence Regional Advisory Council Public Meeting on February 20-21 in Kotzebue.

Closing Statements

Council Member Hannah Loon reported no tribal participation on the teleconference line. Loon asked Council members to speak with their Tribal Council and community members and ask if they have any issues affecting the Federally qualified subsistence users in their area and that they would like Council members to share at the meeting. Loon added that it is difficult because she lives in Kotzebue, but is originally from Selawik, and does not have interaction with people in Selawik, though her daughter still lives there. Council Member Loon added that it is also difficult to engage the Tribal Council

due to the requirement for a background check, and to not owe anything to the Internal Revenue Service. These two factors discourage local participation, despite strong interest in the sound management of subsistence resources.

Loon said she would like those supporting the Ambler Road to deliver their presentation to the Council in-person, rather than by teleconference. Loon also welcomed the new Council Members and thanked Zach Stevenson and agencies for their participation.

Vice Chair Louie Commack Jr. welcomed new Council Members and thanked agencies for their participation. Commack encouraged tribes to become cooperating agencies on the Ambler Road EIS. He asked why Kobuk and Shungnak were not represented on the Northwest Arctic Subsistence Regional Advisory Council. Secretary Atoruk explained the communities of Kobuk and Shungnak are not represented on the Council because no one from those communities applied to serve on the Council

Council Chair Michael Kramer thanked the Council for their vote and making him Chairman. He emphasized the need to mentor youth and share traditional knowledge of hunting, fishing, and gathering with the next generation. Kramer thanked the Selawik Refuge for their youth engagement work in Selawik and Kotzebue. He noted his fifteen years of experience working with the Council, and acknowledged elders who mentored him over the years. Kramer stated that several Council Member term lengths need to be corrected prior to the fall meeting. Several Council Members seats are currently vacant and some are set to expire soon. The deadline for submitting applications to serve on the Council is coming soon. Kramer requested a follow-up on this matter so that people are not penalized for not reapplying because of the Federal government.shutdown. Kramer specifically requested that the term or Member Viveiros on page 4 of the meeting book be checked and corrected, if necessary.

Council Member Tristen Pattee thanked everyone who participated in the meeting and thanked agencies for gathering and sharing information with the public. She also thanked the Council for carefully considering information about potential impacts to certain areas and emphasized the importance of balance when managing lands, inclusive of all Alaskans. She encouraged tribes to contact the BLM, in writing, and become cooperating agencies in the Ambler Road process.

Adjourn (*Chair*)
Council Chairman Michael Kramer made a motion to adjourn. Seconded by Secretary Barbara Atoruk. The Council voted unanimously to adjourn.

I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.

August 12, 2019

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Zachary C. Stevenson, Subsistence Council Coordinator
Office of Subsistence Management

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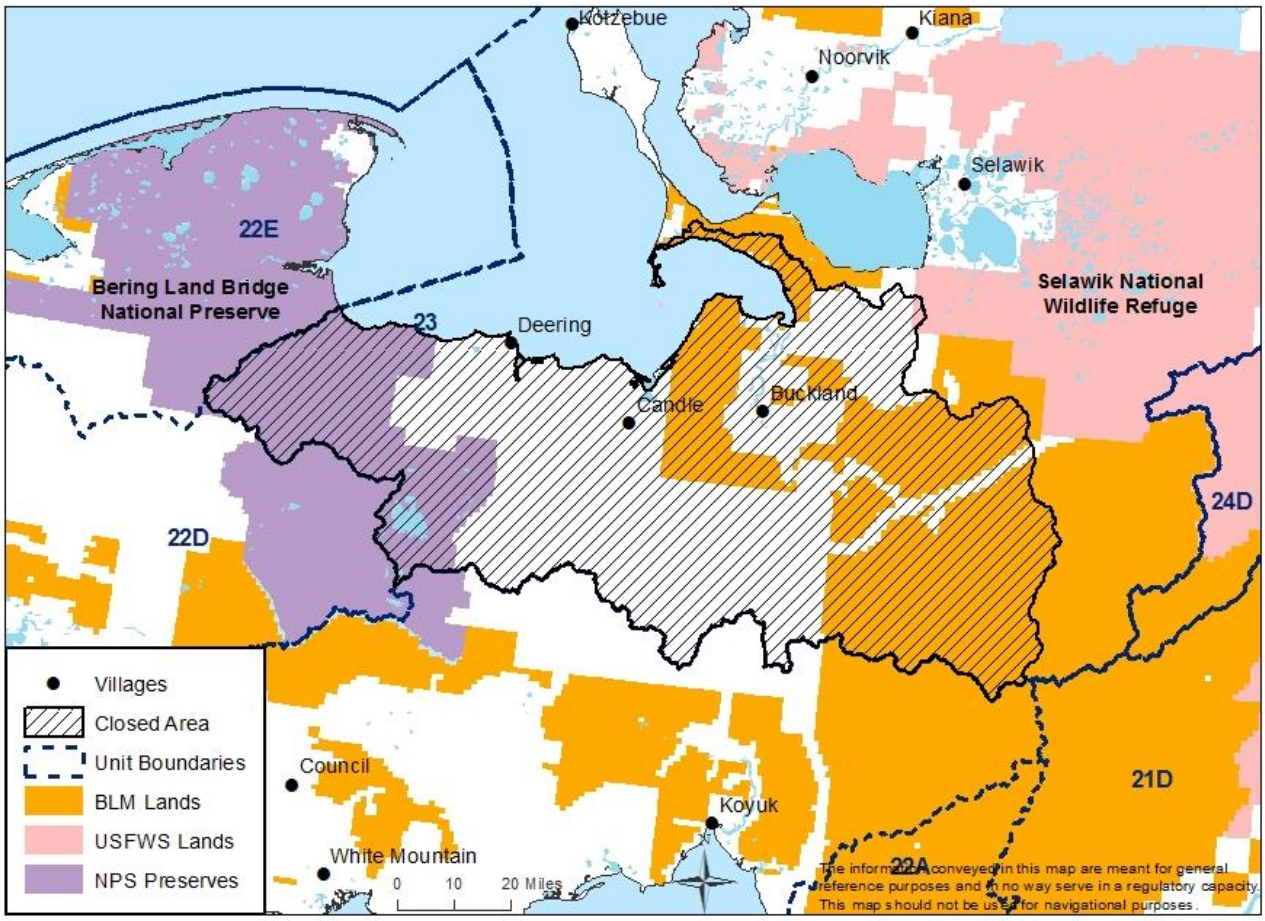
Michael Kramer, Chair
Northwest Arctic Subsistence Regional Advisory Council

These minutes will be formally considered by the Northwest Arctic Subsistence Regional Advisory Council at its winter 2019 meeting, and any corrections or notations will be incorporated in the minutes of that meeting.

FEDERAL WILDLIFE CLOSURE REVIEW
WCR20-19

Closure Location: Southwest portion of Unit 23 (**Map 1**) — Muskox



Map 1. Federal hunt area closure for muskox in Unit 23, south of Kotzebue Sound and west of and including the Buckland River drainage.

Current Federal Regulation

Unit 23−Muskox

Unit 23—south of Kotzebue Sound and west of and including the Buckland River drainage—1 bull by Federal permit or State permit	*Aug. 1-Mar. 15.*

Federal public lands are closed to the taking of musk oxen except by Federally qualified subsistence users hunting under these regulations

Closure Dates: Year round

Current State Regulation

Unit 23−Muskox

Seward Peninsula west of and including the Buckland River drainage	*One bull by permit (TX106)*	*Aug. 1-Mar. 15*

Regulatory Year Initiated: 1995

Regulatory History

In 1991, the Bureau of Land Management (BLM) submitted and then withdrew Proposal P91-94 to add "no open season" and "no customary and traditional use determination" to muskox regulations in Unit 23. BLM submitted the proposal because the population estimate of 123 muskox did not support a viable hunt (OSM 1991).

In 1995, the Seward Peninsula Subsistence Regional Advisory Council submitted Proposal P95-44 to establish muskox hunts in Units 22D and 22E because the muskox population could withstand a harvest of 15 bulls as recommended by the Seward Peninsula Cooperative Muskox Management Plan (OSM 1995a). The Federal Subsistence Board (Board) adopted Proposal P95-44 with modification to also establish a Federal hunt for muskox in Unit 23 south of Kotzebue Sound and west of and including the Buckland River Drainage (Unit 23 SW) to provide additional subsistence opportunity. The Board added Unit 23 SW because muskox from the Seward Peninsula population occurred in the area. The harvest limit was one bull by Federal registration permit. The season was Sept. 1-Jan. 31, but closed whenever 7 muskox were harvested.

The Board also adopted Proposal P95-43, establishing a customary and traditional use determination (C&T) for muskox in Unit 23 SW as residents of Unit 23 SW, which included residents of Deering and Buckland (OSM 1995b).

Note: Prior to 1995, no muskox season existed in Unit 23 SW, so the unit was essentially closed to muskox hunting by both Federally qualified subsistence users and non-Federally qualified users. Proposal P95-44 opened Unit 23 SW to Federally qualified subsistence users only. As Unit 23 SW remained closed to non-Federally qualified users, 1995 is the year WCR18-19 is considered to be initiated.

In 1998, the Alaska Board of Game (BOG) established a Tier II muskox hunt in Unit 23 SW (Persons 1999). The harvest limit was one bull by Tier II permit and the season was Aug. 1-Mar. 15.

In 1999, the Board adopted Proposal P99-46, aligning Federal and State muskox seasons and permit requirements in Unit 23 SW. The season modification and establishment of a State Tier II hunt were the culmination of several years of work by the Seward Peninsula Muskox Cooperators Group (The Cooperators) to create a biologically sound harvest system that met the needs of local users.

In 2001, the Board adopted Proposal WP01-35, changing the harvest limit from one bull to one muskox. However, cows could only be taken from Jan. 1-Mar. 15 and not more than 8 cows could be harvested. Total harvest could not exceed 13 muskox. The Cooperators unanimously supported submitting the

proposal to provide more subsistence opportunity, to better coordinate between State and Federal hunts, and because there were no conservation concerns (OSM 2001). The BOG adopted similar regulations.

In 2002, the Board adopted Proposal WP02-37, delegating authority to the superintendent of the Western Arctic National Parklands to set annual harvest quotas and close the season for muskox in Unit 23 SW.

In 2006, the Board adopted Proposal WP06-55, establishing a designated hunter permit for muskox in Unit 23 SW.

In 2010, the Board adopted Proposal WP10-84 with modification, clarifying the regulatory language and requiring a Federal or State Tier I permit (instead of Tier II) to harvest muskox in Unit 23 SW. The Board revised permit requirements to maintain consistency with recent changes under State regulations.

In 2011, the BOG adopted regulations to allow flexibility in managing muskox hunts outside of the normal regulatory cycle. These changes enabled ADF&G to manage Tier II, Tier I, and drawing permit hunts and to set harvest thresholds based on the relationship between the harvestable surplus and amount necessary for subsistence (Gorn and Dunker 2015).

In 2014, the Board adopted Proposal WP14-41 with modification, eliminating the cow muskox hunt in Unit 23 SW because of conservation concerns.

Unit 23 SW is comprised of 50% Federal public lands and consist of 34% Bureau of Land Management (BLM) managed lands and 16% National Park Service (NPS) managed lands (**Map 1**).

Closure last reviewed: 2014 – WP14-41

Justification for Original Closure:

Section §815(3) of ANILCA states:

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law…*

The Board's intent was to provide subsistence opportunity for hunting muskox in Unit 23 SW, maintaining a subsistence priority as mandated by ANILCA. The closure began when the initial C&T and hunt were established by Proposals P95-43 and P95-44, respectively.

Council Recommendation for Original Closure:

The Northwest Arctic Subsistence Regional Advisory Council opposed Proposal P95-44, stating "let the State season and the system work for a year to see if it meets the needs of the local people. If it does not, the Regional Council could always initiate a proposal to deal with the situation." However, at the Federal Subsistence Board meeting, the Chair of the Northwest Arctic Council supported modified Proposal P95-44, which established a muskox hunt for Federally qualified subsistence users in Unit 23 SW (and closed the area to non-Federally qualified subsistence users) (FSB 1995).

State Recommendation for Original Closure:

The State was neutral on the original closure (P95-44). While the State agreed with the intent of the cooperative muskox management effort, it recommended postponing a decision on P95-44 until the BOG decided on State regulations for muskox in Units 22 and 23 (OSM 1995a). The State submitted a request for reconsideration, R95-05, requesting that the Board rescind their decision on P95-44. The Board rejected R95-05.

Biological Background

Muskox disappeared from Alaska by the late 1800s. In 1970, 36 muskox were reintroduced to the southern portion of the Seward Peninsula. The population grew to 104 muskox by 1980. In 1981, an additional 35 muskoxen were translocated from Nunivak Island to Unit 22D to augment the existing Seward Peninsula muskox population (Nelson 1994).

The Cooperators developed the Seward Peninsula Cooperative Muskox Management Plan (Nelson 1994) to guide muskox management on the Seward Peninsula. The Cooperators include representatives from ADF&G, the National Park Service (NPS), BLM, USFWS, Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities, and other interested groups or organizations. The goals developed by the Cooperators are the same as ADF&G management goals (Nelson 1997, Gorn and Dunker 2015):

- Allow for continued growth and range expansion of the Seward Peninsula muskox population
- Provide for sustained yield harvest in a manner consistent with existing State and Federal laws by following the goals/objectives endorsed by the Cooperators and the Seward Peninsula Cooperative Muskox Management Plan
- Manage muskoxen along the Nome road systems of Unit 22B and 22C for viewing, education, and other nonconsumptive uses
- Work with local reindeer herding interests to minimize conflicts between reindeer and muskoxen
- Protect and maintain the habitats and other components of the ecosystem upon which muskoxen depend
- Encourage cooperation and sharing of information among agencies and users of the resource in developing and executing management and research programs

Since the 1970s, the range of the Seward Peninsula muskox population has greatly expanded. Between 1970 and 2007, surveys were conducted in Units 22B, 22C, 22D, 22E, and 23SW, termed the "core count area" (Gorn and Dunker 2015). Since 2010, surveys have been conducted in the core count area as well as northern Unit 22A, southeastern Unit 23, and Unit 21D, termed the "expanded count area" (Gorn and Dunker 2015).

Between 1970 and 2007, the Seward Peninsula muskox population steadily increased at 13% per year, peaking at 2,688 muskox in 2007 (**Figure 1**) (Gorn and Dunker 2015). In 2010, ADF&G changed survey methodologies (from minimum counts to distance sampling) and began surveying the expanded count

area in addition to the core count area. Between 2007 and 2010, the population was stable, but then decreased 13% per year between 2010 and 2012 in both the core and expanded count areas. Since 2012, the muskox population in the core and expanded count areas has appeared stable and stable-increasing, respectively (**Figure 1**) (Gorn and Dunker 2015, Dunker 2017a). The 2017 population counts for the core and expanded count areas were 1,864 muskox and 2,353 muskox, respectively (Dunker 2017a).

As muskox commonly move between subunits, hunt areas do not represent unique muskox populations (ADF&G 2016, Dunker 2017a). However, individual hunt area population estimates are useful for establishing harvest quotas and managing hunts. Between 1992 and 2017, the number of muskox in Unit 23 SW ranged from 134-255 muskox, averaging 205 muskox (**Figure 2**) (Gorn and Dunker 2015, Dunker 2017a). Over the same time period, the percentage of the Seward Peninsula muskox population occupying Unit 23 SW ranged from 6%-27%, averaging 13% of the population. In 2017, 10% of the Seward Peninsula muskox population occupied Unit 23 SW.

Given the gregarious nature of muskox, mature bulls are important for predator defense, foraging, and group cohesion in addition to breeding (Schmidt and Gorn 2013). For example, mature bulls may protect groups of females with calves against predators, effectively increasing calf survival and recruitment. Therefore, muskox may be more sensitive to selective harvest of mature males than other species (Schmidt and Gorn 2013). Schmidt and Gorn (2013) observed annual rates of population growth for Seward Peninsula muskox decreased disproportionately as harvest rates increased. Mature bulls (MB) are male muskox ≥ 4 years old. Cows are female muskox ≥ 3 years old (Gorn and Dunker 2015). Schmidt and Gorn (2013) suggest that harvest should be eliminated if ratios fall below 20 MB:100 cows and that ratios of 50-70 MB:100 cows may support both harvest and population growth.

Between 2002 and 2017, MB:cow ratios for the entire Seward Peninsula muskox population ranged from 29-44 MB:100 cows (**Figure 3**). Ratios appeared stable between 2015 and 2017. Over the same time period, MB:cow ratios for muskox in Unit 23 SW ranged from 19-33 MB:100 cows (**Figure 3**). In Unit 23 SW, the MB:100 cow ratio decreased between 2015 and 2017 (Gorn and Dunker 2015, Dunker 2017b).

Short yearlings (SY) are muskox between 10 and 15 months old and provide a measure of recruitment. Between 2002 and 2017, SY:cow ratios for the entire Seward Peninsula muskox population ranged from 17-44 SY:100 cows (**Figure 4**). Ratios increased between 2015 and 2017. Over the same time period, SY:cow ratios for muskox in Unit 23 SW ranged from 10-31 SY:100 cows (**Figure 4**). In Unit 23 SW, the SY:100 cow ratio appeared stable between 2015 and 2017 (Gorn and Dunker 2015, Dunker 2017b).

Between 2008 and 2014, mortality rates for radio-collared cows ranged from 4%-26% (Gorn and Dunker 2015). These mortality rates are not representative of the entire population due to the low sample size (1% of the population) and non-random distribution of collars. Eighty-eight percent of mortalities occurred between April and October, suggesting brown bears as a causative agent. Predation on muskox seems to be increasing as bears learn to prey on muskoxen and wolf numbers increase on the Seward Peninsula in response to more Western Arctic caribou wintering there. Brown bear predation on calves may be decreasing recruitments rates (Gorn and Dunker 2015).

Muskox reduce movements during the winter to conserve energy (Nelson 1994). Muskox depend on areas with low snow cover as they cannot forage in deep, hard-packed snow. Therefore, disturbance to

muskox groups during the winter by hunters or predators could decrease survival through increased energetic requirements and movement to unsuitable habitat (Nelson 1994).

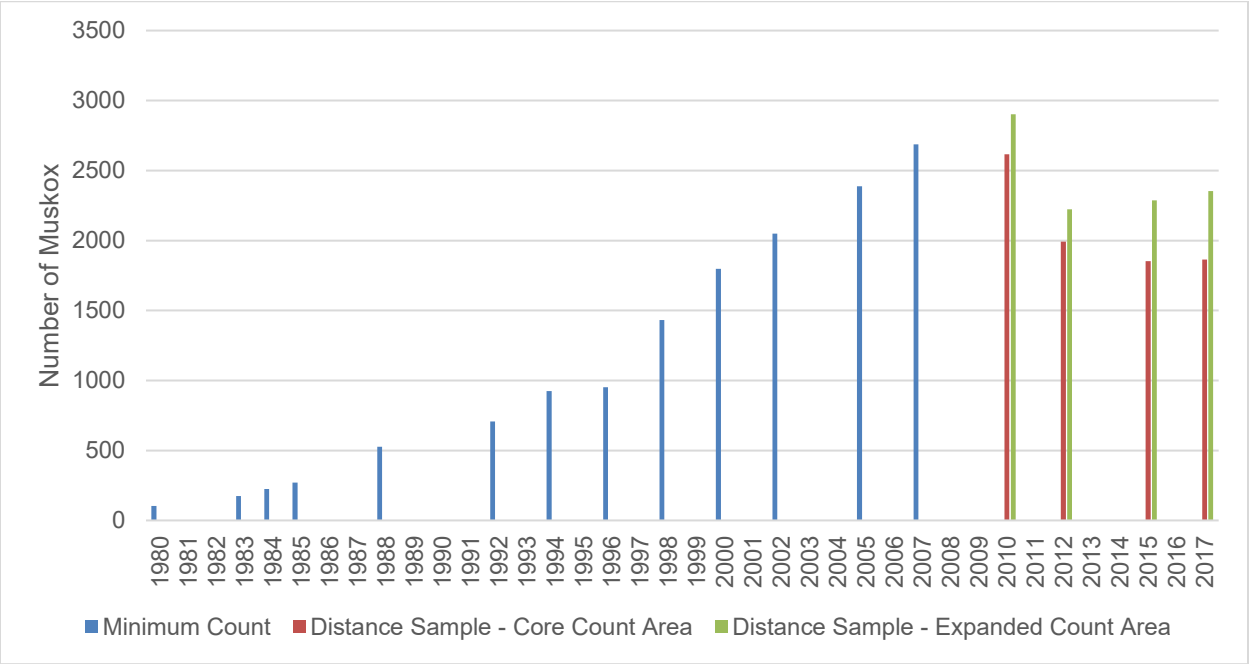


Figure 1. Population estimates for Seward Peninsula muskox. The core count area includes Units 22B, 22C, 22D, 22E, and 23SW. The expanded count area includes the core count area, northern Unit 22A, southeastern Unit 23, and Unit 21D (Gorn and Dunker 2015, Dunker 2017a).

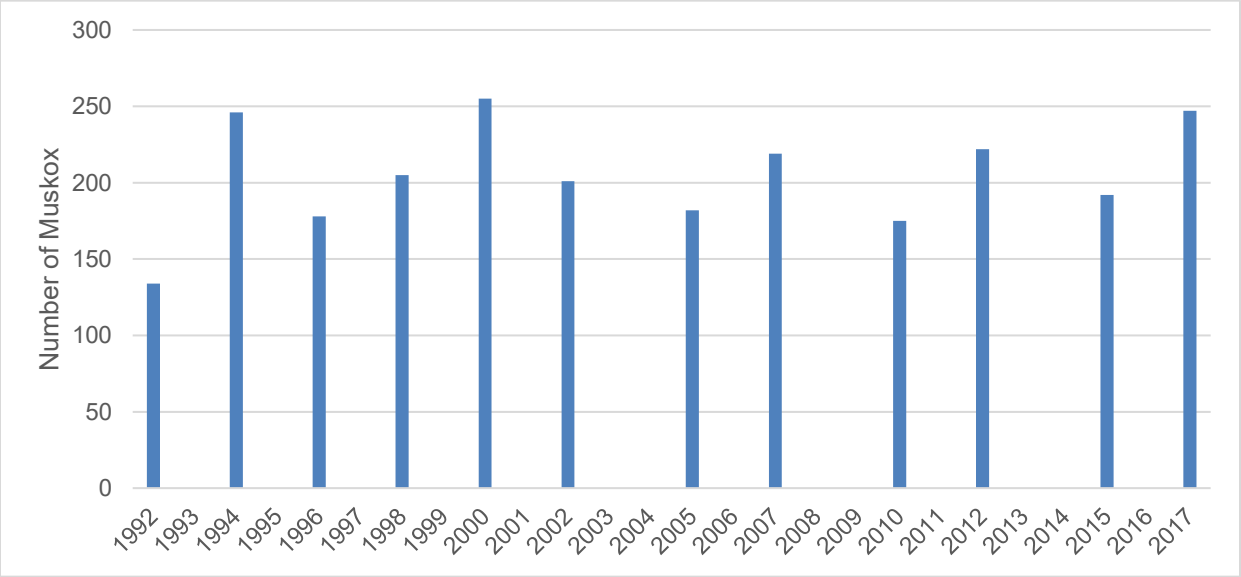


Figure 2. Population estimates for muskox in Unit 23SW (Gorn and Dunker 2015, Dunker 2017a).

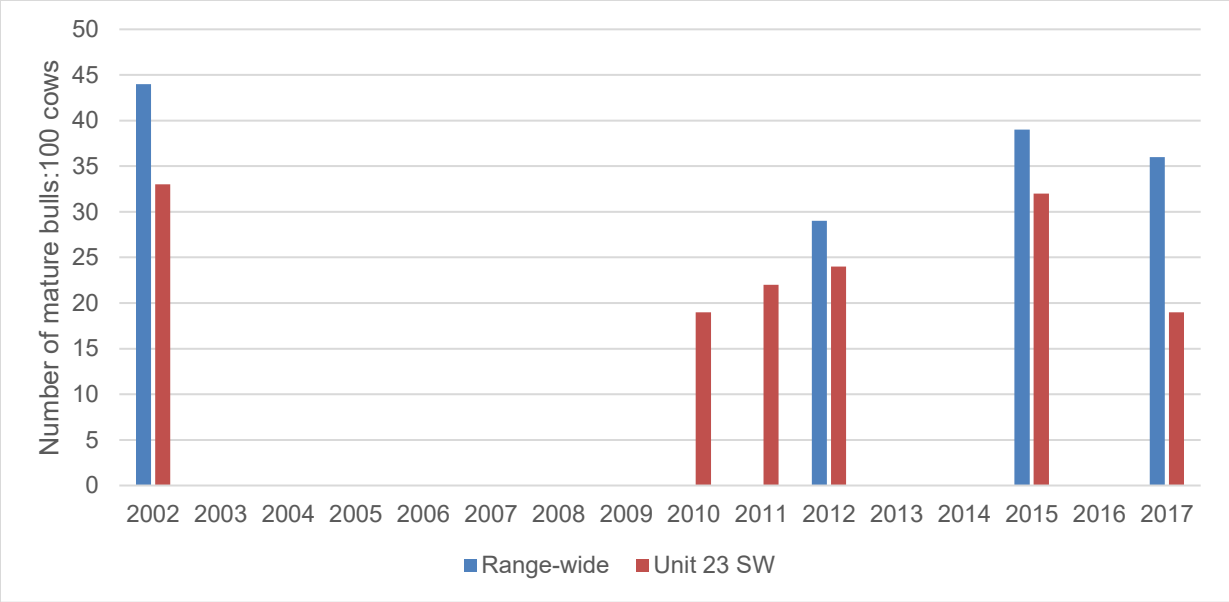


Figure 3. Bull:cow ratios for Seward Peninsula muskox. Ratios are the number of mature bulls:100 cows. Mature bulls are ≥ 4 years old. Cows are ≥ 3 years old. (Gorn and Dunker 2015, Dunker 2017b).

Figure 4. Ratios of short yearlings:100 cows for Seward Peninsula muskox. Short yearlings are muskox between 10 and 15 months old. Cows are ≥ 3 years old. (Gorn and Dunker 2015, Dunker 2017b).

Harvest History

Muskox harvest in Unit 23 SW occurs by State Tier II permit, TX106 on non-Federal lands and by Federal permit, FX2302 on Federal public lands. Since 2012, the range-wide allowable harvest has been 2% of the total population estimate (**Figure 5**). Quotas for individual hunt areas are calculated as 10% of the estimated number of mature bulls in each area (Gorn and Dunker 2015).

Between 1995 and 2014, the allowable harvest for Seward Peninsula muskox ranged from 2%-8%, peaking in 2008 (**Figure 5**) (Gorn and Dunker 2015). After the population declined in 2012 and Schmidt

and Gorn (2013) reported on the importance of mature bull muskoxen in a population (see Biological Background section), the allowable harvest has remained at 2% of the population estimate. Over the same time period, realized harvest has been below allowable harvest in all years except 2011 (**Figure 5**).

Between 1995 and 2011, the muskox harvest quota in Unit 23SW ranged from 6 muskox to 18 muskox (OSM 2014). Between 1995 and 2017, annual harvest ranged from 0 muskox to 18 muskox (**Table 1**) (Dunker 2018, pers. comm.). Most of the harvest occurred under State regulations. Since 2008, no muskox have been harvested by Federal registration permit in Unit 23 SW (**Table 1**) (Adkisson 2018, pers. comm.). Often, the more accessible muskox are found on State lands, so the harvest quota may already be reached before Federally qualified subsistence users have an opportunity to access Federal lands (Adkisson 2018, pers. comm.). Since 2012, non-Federally qualified users from Kotzebue and Noorvik have harvested over half of the muskox from Unit 23 SW (ADF&G 2018).

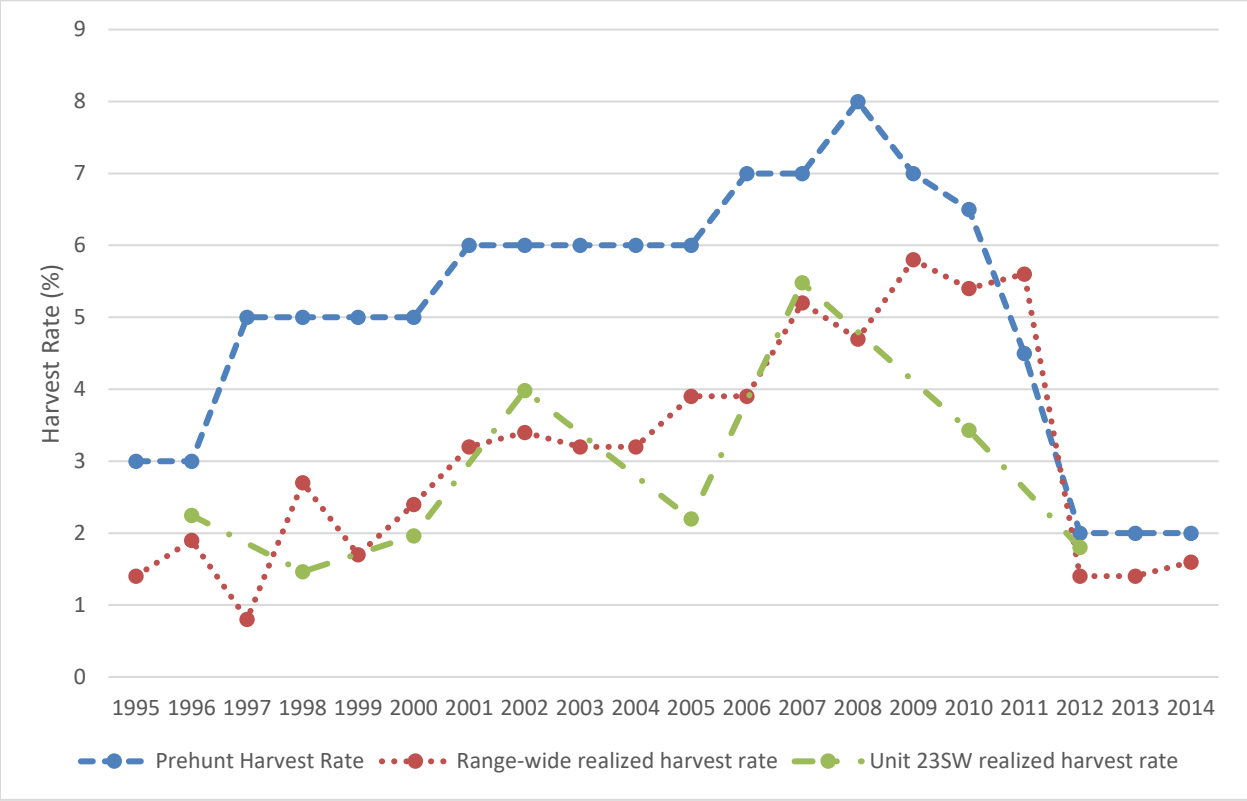


Figure 5. Harvest rates for Seward Peninsula muskox (Gorn and Dunker 2015). Pre-hunt harvest rate is the allowable harvest and realized harvest rate is the actual harvest.

Table 1. Muskox harvest in Unit 23 SW (Dunker 2018, pers. comm., Adkisson 2018, pers. comm.).

Year	FX2302 Issued	FX2302 Harvest	Tier II TX106 Issued	Tier II TX106 Harvest	RX106 Issued	RX106 Harvest	DX106 Issued	DX106 Harvest	Total Harvest
1995	7	6							6
1996	9	3							3
1997	6	1							1
1998	8	2	2	1					3
1999	8	0	1	1					1
2000	4	1	8	5					6
2001	6	2	11	6					8
2002	4	0	9	9					9
2003	6	2	10	3					5
2004	6	2	12	6					8
2005	4	1	8	3					4
2006	6	1	13	3					4
2007	10	2	30	10					12
2008	5	0	0	0	49	16	2	0	16
2009	4	0	0	0	27	17	1	1	18
2010	0	0	0	0	25	6			6
2011	0	0	0	0	8	7			7
2012	0	0	4	0					0
2013	0	0	5	2					2
2014	4	0	4	3					3
2015	2	0	4	3					3
2016	3	0	3	1					1
2017	1	0	3	3					3
2018	2		3						

OSM Preliminary Conclusion:

X maintain status quo
_ modify or eliminate the closure

Justification

The harvestable surplus of muskoxen in Unit 23 SW is very low and the population cannot sustain increases in harvest. No muskox have been harvested under Federal regulations in Unit 23 SW since 2008. Continuing the current closure is necessary to conserve the muskox population while providing for subsistence opportunity and a meaningful rural subsistence priority.

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SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

Northwest Arctic Subsistence Regional Advisory Council

Maintain status quo for WCR20-19.

The Council supported maintaining the closure (status quo) for muskox hunting in Unit 23 for the reasons stated in the OSM justification.

Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199

FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

FOREST SERVICE

OSM 19036 KW

JUN 19 2019

Michael Chad Kramer, Chair
Northwest Arctic Subsistence Regional Advisory Council
c/o Office of Subsistence Management
1011 E. Tudor Road, M/S 121
Anchorage, Alaska 99503-6199

Dear Mr. Kramer,

The Federal Subsistence Board (Board) met on April 15-18, 2019 regarding proposed changes to subsistence fish and shellfish regulations. This letter identify action taken on proposals affecting residents of the Northwest Arctic Region.

Section 805(c) of the Alaska National Interest Lands Conservation Act (ANILCA) provides that the Board will accept the recommendations of a Regional Advisory Council regarding take unless (1) the recommendation is not supported by substantial evidence, (2) the recommendation violates recognized principles of fish and wildlife management, or (3) adopting the recommendation would be detrimental to the satisfaction of subsistence needs. When a Council's recommendation is not adopted, the Board is required by Secretarial regulations to set forth the factual basis and reasons for the decision.

Out of twenty proposals submitted, one was withdrawn by a proponent and the Board accepted the majority recommendations of the Regional Advisory Councils, in whole or with modifications, on 18 of the 19 proposals. Details of these actions and the Boards' deliberations are contained in the meeting transcriptions. Copies of the transcripts may be obtained by calling toll free number, 1-800-478-1456, and are available online at the Federal Subsistence Management Program website, https://www.doi.gov/subsistence.

The Board uses a consensus agenda on those proposals where there is agreement among the affected Subsistence Regional Advisory Council(s), a majority of the Interagency Staff Committee, and the Alaska Department of Fish and Game concerning a proposed regulatory action. These proposals were deemed non-controversial and did not require a separate

discussion. The Board did not address any fish or shellfish proposals, either on the consensus or non-consensus addenda, affecting the Northwest Arctic Region.

The Federal Subsistence Board appreciates the Northwest Arctic Subsistence Regional Advisory Council's active involvement in and diligence with the regulatory process. The ten Regional Advisory Councils continue to be the foundation of the Federal Subsistence Management Program, and the stewardship shown by the Regional Advisory Council chairs and their representatives at the Board meeting is much appreciated.

If you have any questions regarding the summary of the Board's actions, please contact Zachary Stevenson, Council Coordinator, at 907-786-3674 or zachary_stevenson@fws.gov.

Sincerely,

Anthony Christianson, Chair
Federal Subsistence Board

cc: Federal Subsistence Board
Northwest Arctic Subsistence Regional Advisory Council members
Thomas Doolittle, Acting Assistant Regional Director, Office of Subsistence Management
Jennifer Harding, PhD, Acting Deputy Assistant Regional Director, Office of Subsistence Management
George Pappas, State Subsistence Liaison, Office of Subsistence Management
Greg Risdahl, Fisheries Division Supervisor, Office of Subsistence Management
Katerina Wessels, Acting Council Coordination Division Supervisor, Office of Subsistence Management
Zachary Stevenson, Subsistence Council Coordinator, Office of Subsistence Management
Interagency Staff Committee
Administrative Record

Presentation Procedure for Proposals

1. **Introduction and presentation of analysis**
2. **Report on Board Consultations**:
    a. Tribes;
    b. ANCSA Corporations
3. **Agency Comments**:
    a. ADF&G;
    b. Federal;
    c. Tribal
4. **Advisory Group Comments**:
    a. Other Regional Council(s);
    b. Fish and Game Advisory Committees;
    c. Subsistence Resource Commissions
5. **Summary of written public comments**
6. **Public testimony**
7. **Regional Council recommendation** (motion to adopt)
8. **Discussion/Justification**
    - Is the recommendation consistent with established fish or wildlife management principles?
    - Is the recommendation supported by substantial evidence such as biological and traditional ecological knowledge?
    - Will the recommendation be beneficial or detrimental to subsistence needs and uses?
    - If a closure is involved, is closure necessary for conservation of healthy fish or wildlife populations, or is closure necessary to ensure continued subsistence uses?
    - Discuss what other relevant factors are mentioned in OSM analysis
9. **Restate final motion for the record, vote**

WP20–43/44/45/46 Executive Summary	
General Description	Wildlife Proposal WP20-43 requests a year-round bull season for caribou in Unit 23. *Submitted by: Kotzebue Sound Fish and Game Advisory Committee.* Wildlife Proposal WP20-44, submitted by the Kotzebue Sound AC, requests that calf harvest be permitted for caribou in Unit 23. *Submitted by: Kotzebue Sound Fish and Game Advisory Committee.* Wildlife Proposal WP20-45 requests a year-round bull season for caribou in Unit 23. *Submitted by: Northwest Arctic Subsistence Regional Advisory Council.* Wildlife Proposal WP20-46 requests a year-round bull season and that calf harvest be permitted for caribou in Unit 23. *Submitted by: Western Arctic Caribou Herd Working Group.*
Proposed Regulation	WP20-43/45 **Unit 23—Caribou** *Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage* *5 caribou per day by State registration permit as follows:* *Calves may not be taken.* *Bulls may be harvested* — *July 1–~~Oct. 14~~* *~~Feb. 1~~ June 30* *Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.* — *July 15–Apr. 30* *Unit 23, remainder* *5 caribou per day by State registration permit as follows:* *Calves may not be taken.* *Bulls may be harvested* — *July 1–~~Oct. 31~~* *~~Feb.1~~ June 30*

WP20–43/44/45/46 Executive Summary		
	Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
	Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	
	WP20-44	
	Unit 23—Caribou	
	Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
	5 caribou per day by State registration permit as follows:	
	~~*Calves may not be taken.*~~	
	Bulls may be harvested	*July 1–Oct. 14* *Feb. 1–June 30*
	Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
	Unit 23, remainder	
	5 caribou per day by State registration permit as follows:	
	~~*Calves may not be taken*~~.	
	Bulls may be harvested	*July 1–Oct. 31* *Feb.1–June 30*

WP20–43/44/45/46 Executive Summary		
	Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
	Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	
	WP20-46	
	Unit 23—Caribou	
	Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
	5 caribou per day by State registration permit as follows: *~~Calves may not be taken~~.*	
	Bulls may be harvested	*July 1–~~Oct. 14~~ ~~Feb. 1~~ June 30*
	Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
	Unit 23, remainder	
	5 caribou per day by State registration permit as follows: *~~Calves may not be taken~~.*	
		July 1–~~Oct. 31~~

WP20–43/44/45/46 Executive Summary		
	Bulls may be harvested	*~~Feb.1~~ June 30*
	Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
	Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	
OSM Preliminary Conclusion	**Support** Proposal WP20-46 and **take no action** on Proposals WP20-43, WP20-44, and WP20-45.	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation		
Seward Peninsula Subsistence Regional Advisory Council Recommendation		
Northwest Arctic Subsistence Regional Advisory Council Recommendation		
North Slope Subsistence Regional Advisory Council Recommendation		
Interagency Staff Committee Comments		

WP20–43/44/45/46 Executive Summary	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-43/44/45/46

ISSUES

Wildlife Proposal WP20-43, submitted by the Kotzebue Sound Fish and Game Advisory Committee (Kotzebue Sound AC), requests a year-round bull season for caribou in Unit 23.

Wildlife Proposal WP20-44, submitted by the Kotzebue Sound AC, requests that calf harvest be permitted for caribou in Unit 23.

Wildlife Proposal WP20-45, submitted by the Northwest Arctic Subsistence Regional Advisory Council (Northwest Arctic Council), requests a year-round bull season for caribou in Unit 23.

Wildlife Proposal WP20-46, submitted by the Western Arctic Caribou Herd Working Group (WACH Working Group), requests a year-round bull season and that calf harvest be permitted for caribou in Unit 23.

DISCUSSION

The Kotzebue Sound AC, the proponent for WP20-43, noted that a variety of conservation measures were taken during the recent decline in the WACH population, including closing the bull season during the rut. As local people generally harvest bulls in September and avoid them during rut, little effect on traditional hunting practices was anticipated. However, in recent years, the timing of the Western Arctic Caribou Herd (WACH) migration has occurred later in the year, resulting in the bull season already being closed when caribou pass through accessible areas. This has shifted harvest pressure to cows, which could become a conservation concern. If the bull season remained open year-round, hunters could harvest young bulls that do not stink during rut like older bulls, and conserve cows to help grow the herd. Compliance issues associated with distinguishing between bulls and cows for harvest would also be alleviated.

The Kotzebue Sound AC, the proponent for WP20-44, states that removing the prohibition on calf harvest would allow harvest of orphaned calves that would otherwise succumb to predators. The proponent states that no one targets calves, but in rare circumstances, it makes sense to harvest an abandoned calf for human consumption rather than leaving it for other predators.

The Northwest Arctic Council, the proponent for WP20-45, states that eliminating the bull caribou closure would allow harvest of young bulls, reducing harvest pressure on cows. As the timing of fall caribou migration has shifted later in the year, only the cow season is open when caribou are accessible for harvest. The proponent also states that eliminating the bull closure takes pressure off of Federally qualified subsistence users, who can spend a lot of time and fuel accessing hunting areas, to harvest caribou during a certain timeframe.

The WACH Working Group, the proponent for WP20-46, provided the same rationale for the removal of the bull closure and prohibition on calf harvest as the Kotzebue AC, the proponent for WP20-43/44 (see above).

Existing Federal Regulations

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	 *July 1–Oct. 14* *Feb. 1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
Unit 23, remainder	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	 *July 1–Oct. 31* *Feb.1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	

Proposed Federal Regulations

WP20-43/45

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	*July 1–~~Oct. 14~~* *~~Feb. 1~~ June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
Unit 23, remainder	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	*July 1–~~Oct. 31~~* *~~Feb.1~~ June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	

WP20-44

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage

5 caribou per day by State registration permit as follows:
~~Calves may not be taken.~~
Bulls may be harvested — *July 1–Oct. 14*
Feb. 1–June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14. — *July 15–Apr. 30*

Unit 23, remainder

5 caribou per day by State registration permit as follows:
~~Calves may not be taken~~.
Bulls may be harvested — *July 1–Oct. 31*
Feb.1–June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14. — *July 31–Mar. 31*

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations

WP20-46

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage

5 caribou per day by State registration permit as follows:
~~Calves may not be taken~~.
Bulls may be harvested — *July 1~~–Oct. 14~~*
~~Feb. 1~~–June 30

Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14. — *July 15–Apr. 30*

Unit 23, remainder

5 caribou per day by State registration permit as follows:
~~Calves may not be taken~~.
Bulls may be harvested *July 1–~~Oct. 31~~ ~~Feb.1~~–June 30*

Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14. *July 31–Mar. 31*

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations

Existing State Regulations

Unit 23—Caribou

23, north of and including Singoalik River drainage	*Residents—Five caribou per day; however, calves may not be taken. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Barrow, and at license vendors in Unit 23 and 26A beginning June 20.*	*Bulls*	*RC907*	*July 1-Oct. 14 Feb. 1-June 30*
		Cows	*RC907*	*Jul. 15-Apr. 30*
	Nonresidents—One bull; however, calves may not be taken.		*HT*	*Aug. 1-Sept. 30*
23 remainder	*Residents—Five caribou per day; however, calves may not be taken. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Barrow, and at license vendors in Unit 23 and 26A beginning June 20.*	*Bulls*	*RC907*	*July 1-Oct. 14 Feb. 1-June 30*
		Cows	*RC907*	*Sept. 1-Mar. 31*
	Nonresidents—One bull; however, calves may not be taken.		*HT*	*Aug. 1-Sept. 30*

Extent of Federal Public Lands

Unit 23 is comprised of 71% Federal public lands and consist of 40% National Park Service (NPS) managed lands, 22% Bureau of Land Management (BLM) managed lands, and 9% U.S. Fish and Wildlife Service (USFWS) managed lands.

Customary and Traditional Use Determinations

Residents of Unit 21D west of the Koyukuk and Yukon Rivers, Galena, 22, 23, 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and 26A have a customary and traditional use determination for caribou in Unit 23 (**Map 1**).

Regulatory History

In 1990, the caribou hunting season in Unit 23 was open year round with a five caribou per day harvest limit and a restriction on the harvest of cows May 16-June 30.

In 1995, the Federal Subsistence Board (Board) adopted Proposal P95-51 to increase the caribou harvest limit from five to 15 caribou per day so that subsistence hunters could maximize their hunting efforts when caribou were available (FWS 1995a).

In 1997, the Board adopted Proposal P97-66 with modification to provide a customary and traditional use determination for caribou in Unit 23 for rural residents of Unit 21D west of the Koyukuk and Yukon rivers, Galena, Units 22, 23, 24 including residents of Wiseman, but not other residents of the Dalton Highway Corridor Management Area and Unit 26A (**Map 1**, FWS 1995b, 1997).

In 2000, the Board adopted Proposal WP00-53 with modification, allowing the use of snowmachines to position a hunter to select individual caribou for harvest in Units 22 and 23. This was done to recognize a customary and traditional practice in the region (FWS 2000a).

In 2013, an aerial photo census indicated significant declines in the Teshekpuk Caribou herd (TCH), WACH, and possibly the Central Arctic Caribou Herd (CACH) populations (Caribou Trails 2014). In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both Alaska residents and nonresidents within the range of the WACH and the TCH. These regulation changes – which included lowering bag limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of new hunt areas, and prohibiting calf harvest – were adopted to slow or reverse the population decline. The regulatory changes took effect on July 1, 2015.

In 2015, four special actions, WSA15-03/04/05/06, requesting changes to caribou regulations in Units 23, 24, and 26, were submitted by the North Slope Council and approved with modification by the Board, effective July 1, 2015. Temporary Special Action WSA15-03 requested designation of a new hunt area for caribou in the northwest corner of Unit 23 where the harvest limit would be reduced from 15 to five caribou per day, the harvest season would be shortened for bulls and cows, and the harvest of calves would be

prohibited. The Board did not establish a new hunt area, applying the restrictions to all of Unit 23 and also prohibited the harvest of cows with calves. These State and Federal regulatory changes were the first time that harvest restrictions had been implemented for the WACH in over 30 years.

Five proposals (WP16-37, WP16-48, WP16-49/52, and WP16-61) concerning caribou regulations in Unit 23 were submitted to the Board for the 2016-2018 wildlife regulatory cycle. The Board adopted WP16-48 with modification to allow the positioning of a caribou, wolf, or wolverine for harvest on BLM lands only. Proposal WP16-37 requested that Federal caribou regulations mirror the new State regulations across the ranges of the WACH and TCH (Units 21D, 22, 23, 24, 26A, and 26B). The Board adopted Proposal WP16-37 with modification to reduce the harvest limit to five caribou per day, restrict bull harvest during rut and cow harvest around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-Oct.), and to create a new hunt area in the northwest corner of Unit 23. The Board took no action on the remaining proposals (WP16-49/52, and WP16-61) due to action taken on WP16-37.

In 2015, the Northwest Arctic Council submitted a temporary special action request (WSA16-01) to close caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (NFQU) for the 2016/17 regulatory year. The Council stated that their request was necessary for conservation purposes but also needed because nonlocal hunting activities were negatively affecting subsistence harvests. In April 2016, the Board approved WSA16-01, basing its decision on the strong support of the Northwest Arctic and North Slope Councils, public testimony in favor of the request, as well as concerns over conservation and continuation of subsistence uses (FSB 2016).

In June 2016, the State submitted a special action request (WSA16-03) to reopen caribou hunting on Federal public lands in Unit 23 to NFQU, providing new biological information (e.g. calf recruitment, weight, body condition) on the WACH. The State specified that there was no biological reason for the closure and that it could increase user conflicts. In January 2017, the Board rejected WSA16-03 due to the position of all four affected Councils (Northwest Arctic, North Slope, Seward Peninsula, and Western Interior) as well as public testimony and Tribal consultation comments opposing the request. Additionally, the Board found the new information provided by the State to be insufficient to rescind the closure.

In January 2017, the BOG adopted Proposal 2, requiring registration permits for residents hunting caribou within the range of the Western Arctic and Teshekpuk herds in Units 21, 23, 24, and 26 (a similar proposal was passed for Unit 22 in 2016). The Alaska Department of Fish and Game (ADF&G) submitted the proposal in order to better monitor harvest and improve management flexibility. Also in January 2017, the BOG rejected Proposal 45, which proposed requiring big game hunting camps to be spaced at least three miles apart along the Noatak, Agashashok, Eli, and Squirrel Rivers. The proposal failed as it would be difficult to enforce.

In March 2017, the Northwest Arctic Council submitted temporary special action request, WSA17-03 to close caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users for the 2017/18 regulatory year. The Council stated that the intent of the proposed closure was to ensure subsistence use in the 2017/18 regulatory year, to protect declining caribou populations, and to reduce user conflicts. The

Board voted to approve WSA17-03 with modification to close all Federal public lands within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage, to caribou hunting except by Federally qualified subsistence users for the 2017/18 regulatory year. The Board considered the modification a reasonable compromise for all users, and that closure of the specified area was warranted in order to continue subsistence use.

In April 2018, the Board adopted Proposals WP18-46 with modification and WP18-48 (effective July 1, 2018). Proposal WP18-46 requested closing caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (similar to WSA16-01 and WSA17-03). The Board adopted WP18-46 with the same modification as WSA17-03 (see above) as the Northwest Arctic, Western Interior, and Seward Peninsula Councils as well as the village of Noatak supported this modification and viewed the targeted closure as effectively addressing user conflicts and the continuation of subsistence uses. The Board also adopted WP18-48 to require State registration permits for caribou hunting in Units 22, 23, and 26A to improve harvest reporting and herd management, and to align with State regulations.

Controlled Use Areas

In 1988, the Traditional Council of Noatak submitted a proposal to the BOG to create the Noatak Controlled Use Area (CUA) in order to restrict the use of aircraft in any manner for big game hunting Aug. 15 - Sept. 20 due to user conflicts (Fall 1990:86). The proposed CUA extended five miles on either side of the Noatak River, from the mouth of the Eli River upstream to the mouth of the Nimiuktuk River, including the north side of Kivivik Creek (ADF&G 1988:47). The BOG adopted the proposal with modification to close a much smaller area extending from the Kugururok River to Sapun Creek from Aug. 20-Sept. 20.

The CUA was expanded in 1994 and modified in 2017 (Betchkal 2015, Halas 2015, ADF&G 2017a). From 1994-2016, the Noatak CUA consisted of a 10-mile wide corridor (5 miles either side) along the Noatak River from its mouth to Sapun Creek with approximately 80 miles of the CUA within Noatak National Preserve (NP) (**Map 2**, Betchkal 2015). The closure dates from 1994-2009 were Aug. 25-Sept. 15. In 2009 (effective 2010), the BOG adopted Proposal 22 to expand the closure dates to Aug. 15-Sept. 30 in response to the timing of caribou migration becoming less predictable (ADF&G 2009). During the 2016/17 BOG regulatory cycle, the Noatak/Kivalina & Kotzebue AC proposed (Proposal 44) extending the upriver boundary of the Noatak CUA to the Cutler River, citing increased user conflicts as their rationale (ADF&G 2017b). In January 2017, the BOG approved amended Proposal 44 to shift the boundaries of the Noatak CUA to start at the mouth of the Agashashok River and end at the mouth of the Nimiuktuk River with approximately 105 miles within Noatak NP (**Map 2**, ADF&G 2017a).

In 1990, the Noatak CUA was adopted under Federal regulations. In 1995, the Board adopted Proposal P95-50 to expand the time period and area of the CUA to Aug. 25-Sept. 15 and the mouth of the Noatak River upstream to the mouth of Sapun Creek, respectively, which aligned with current State regulations. In 2008, Proposals WP08-50 and 51 requested modifications to the Noatak CUA dates. These proposals were submitted in response to caribou migration occurring later in the season, to improve caribou harvest

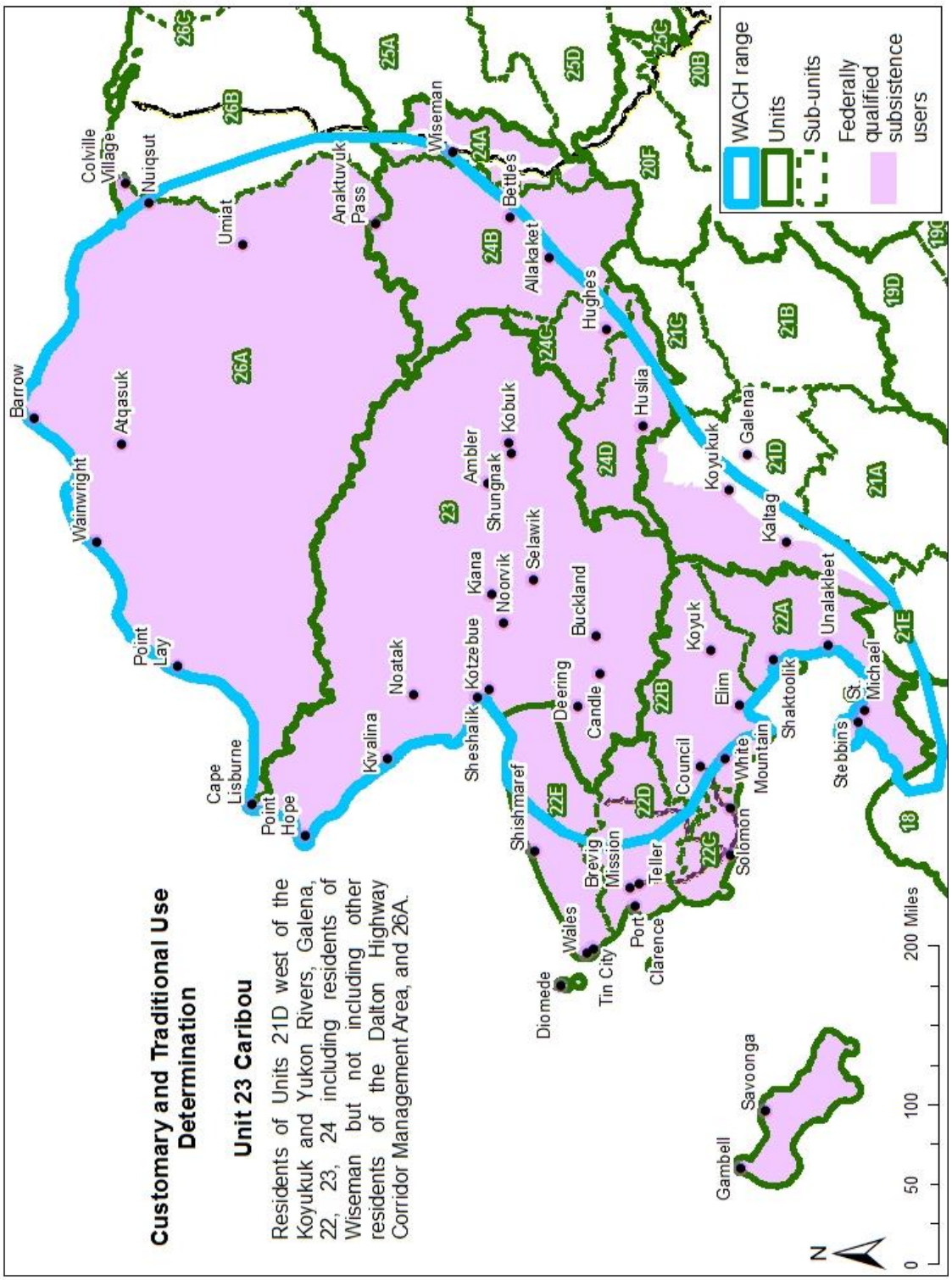
for subsistence users, and to decrease conflicts between local and nonlocal hunters. The Board deferred these proposals to the next regulatory cycle. In 2010, Proposals WP10-82, 83, and 85 requested similar date changes. The Board adopted WP10-85 to expand the time period during which aircraft are restricted in the Noatak CUA to Aug. 15-Sept. 30, which aligned with the current State regulations.

In 2011, Selawik National Wildlife Refuge (NWR) designated refuge lands in the northwest portion of the refuge as closed to big game hunting by commercial guides and transporters through their comprehensive conservation plan (FWS 2011, 2014). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik (**Map 2**). The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (FWS 2011).

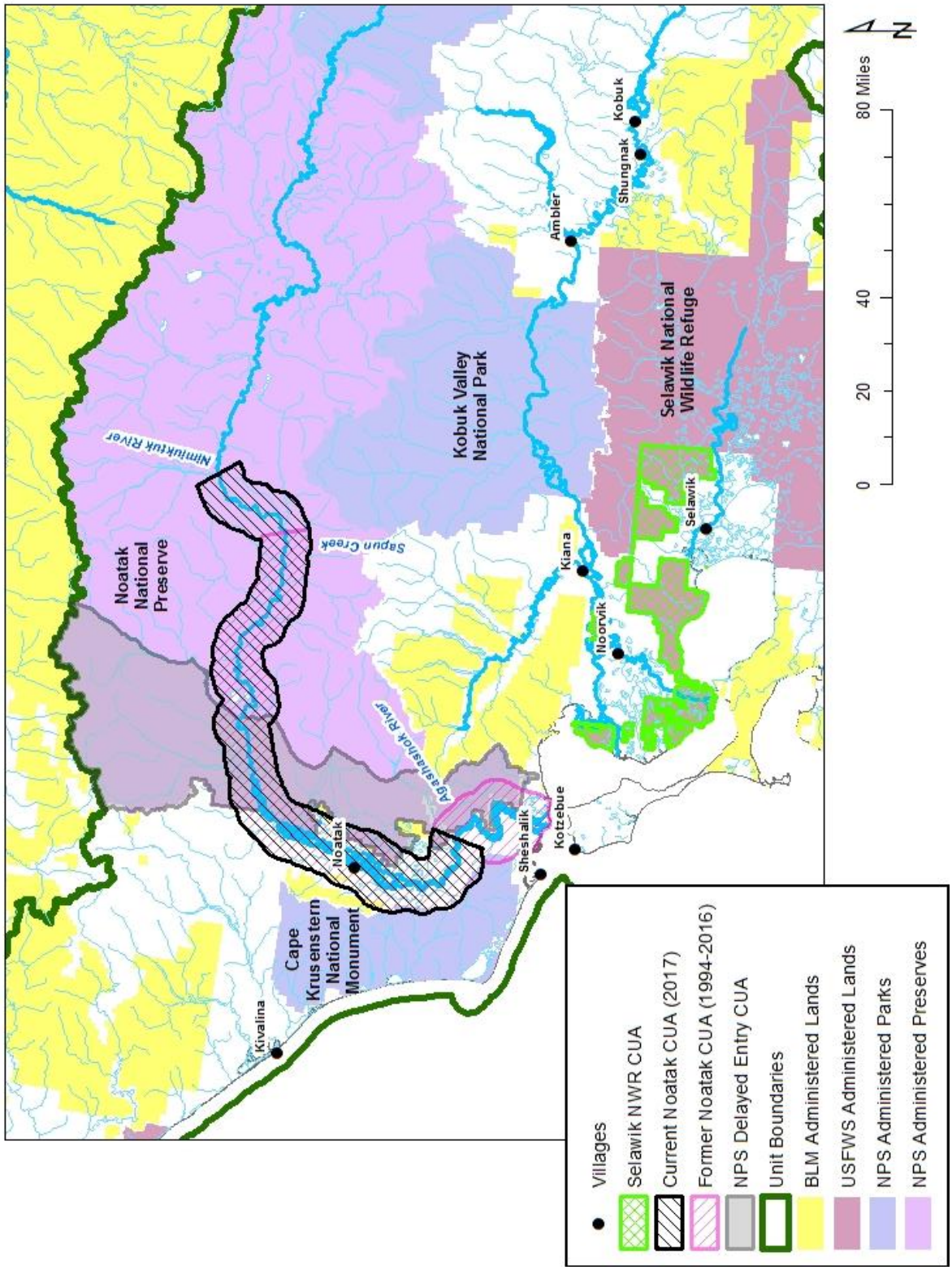
In 2012, the NPS established a Special Commercial Use Area or "delayed entry zone" in the western portion of the Noatak NP (Halas 2015, Fix and Ackerman Fix 2015). Within this zone, transporters can only transport nonlocal caribou hunters after September 15 unless otherwise specified by the Western Arctic Parklands (WEAR) superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015). The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River and establish migration routes, to limit interactions between local and nonlocal hunters, and to allow local hunters the first opportunity to harvest caribou in that area (**Map 2**, FWS 2014, Halas 2015). To date, the Superintendent has not used his/her authority to alter the closure dates in response to changes in caribou herd migration or to meet the needs of local hunters (Halas 2015).

Current Events

The Kotzebue Sound AC and the WACH Working Group submitted proposals to the BOG that mirror Proposal WP20-43 (eliminate bull closure) and WP20-44 (eliminate prohibition on calves) to maintain alignment of State and Federal regulations and reduce user confusion. The BOG will act on these proposals at its Arctic/Western Region meeting in January 2020.



Map 1. Customary and Traditional (C&T) Use Determination for caribou in Unit 23. C&T Determinations indicate which Alaska rural residents are Federally qualified subsistence users. The range of the WACH is included for context.



Map 2. Federal and State Hunting Management Areas in Unit 23.

Biological Background

Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) reports the mean doubling rate for Alaskan caribou as 10 ± 2.3 years. Although the underlying mechanisms causing these fluctuations are uncertain, climatic oscillations (i.e. Arctic and Pacific Decadal Oscillations) may play an important role (Gunn 2001, Joly et al. 2011). Climatic oscillations can influence factors such as snow depth, icing, forage quality and growth, wildfire occurrence, insect levels, and predation, which all contribute to caribou population dynamics (Joly et al. 2011). Density-dependent reduction in forage availability, resulting in poorer body condition may exacerbate caribou population fluctuations (Gunn 2001).

Caribou calving generally occurs from late May to mid-June (Dau 2013). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Fest-Bianchet 2014).

The TCH, WACH, and CACH have ranges that overlap in Unit 26A (**Map 3**), and there can be considerable mixing of herds during the fall and winter. During the 1970s, there was little overlap between these herds, but the degree of mixing seems to be increasing. Currently, the WACH, TCH, and CACH populations are all declining (Dau 2011, 2015a, Lenart 2011, Parrett 2011, 2015c, 2015d).

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska. In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (**Map 4**, Dau 2011, WACH Working Group 2011).

Dau (2013) determined the calving dates for the WACH to be June 9–13. This is based upon long-term movement and distribution data obtained from radio-collared caribou (these are the dates cows ceased movements). After the calving period, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range.

In the fall, the herd moves south toward wintering grounds in the northern portion of the Nulato Hills. Rut occurs during fall migration (Dau 2011, WACH Working Group 2011). Dau (2013) determined the WACH rut dates to be October 22–26 based on back-calculations from calving dates using a 230 day gestation period. Since about 2000, the timing of fall migration has been less predictable, often occurring later than in previous decades (Dau 2015a). From 2010-2015, the average date that GPS collared caribou crossed the Noatak River ranged from Sep. 30 – Oct. 23 (Joly and Cameron 2017). The proportion of caribou using certain migration paths varies each year (**Figure 1**, Joly and Cameron 2017). In recent years (2012-2014), the path of fall migration has shifted east (Dau 2015a).

The WACH Working Group developed a WACH Cooperative Management Plan in 2003, and revised it in 2011 (WACH Working Group 2011). The WACH Management Plan identifies seven plan elements:

cooperation, population management, habitat, regulations, reindeer, knowledge, and education as well as associated goals, strategies, and management actions. As part of the population management element, the WACH Working Group developed a guide to herd management determined by population size, population trend, and harvest rate. Population sizes guiding management level determinations were based on recent (since 1970) historical data for the WACH (WACH Working Group 2011). Revisions to recommended harvest levels under liberal and conservative management (+/- 100 - 2,850 caribou) were made in December 2015 (WACH Working Group 2015, **Table 1**). The State of Alaska manages the WACH to protect the population and its habitat, provide for subsistence and other hunting opportunities on a sustained yield basis, and provide for viewing and other uses of caribou (Dau 2011). State management objectives for the WACH are the same as the goals specified in the WACH Management Plan (Dau 2011, WACH Working Group 2011) and include:

- Encourage cooperative management of the WACH among State, Federal, local entities, and all users of the herd.
- Manage for healthy populations using management strategies adapted to fluctuating population levels and trends.
- Assess and protect important habitats.
- Promote consistent and effective State and Federal regulations for the conservation of the WACH.
- Seek to minimize conflict between reindeer herders and the WACH.
- Integrate scientific information, traditional ecological knowledge of Alaska Native users, and knowledge of all users into management of the herd.
- Increase understanding and appreciation of the WACH through the use of scientific information, traditional ecological knowledge of the Alaska Native users, and knowledge of all other users.

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial photo censuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003 (**Figure 2**). Since 2003, the herd has declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou in 2016 (Caribou Trails 2014; Dau 2011, 2014, Parrett 2016a). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 2, Table 1**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level. ADF&G conducted a successful photocensus of the WACH on July 1, 2016. This census resulted in a minimum count of 194,863 caribou with a point estimate of 200,928 (Standard Error = 4,295), suggesting the WACH was still within the conservative management level, although close to the threshold for preservative management (**Figure 2, Table 1**). Results of this census indicate an average annual decline of 5% per year since 2013, representing a much lower rate than the 15% annual decline between 2011 and 2013. The large cohorts of 2015 and 2016, which currently comprise a substantial proportion of the herd, contributed to the recent decreased rate of decline, but remain vulnerable to difficult winter conditions due to their young age (Parrett 2016a).

ADF&G conducted another photocensus in the summer of 2017 and also transitioned from film to digital cameras, which enhanced their ability to complete a successful and timely census (Parrett 2017a). The 2017 photocensus yielded a minimum count of 239,055 caribou with a point estimate of 259,000 caribou (Standard Error = 29,000) (Parrett 2017a). However, the use of new technology (digital cameras) may have influenced the counts, complicating comparisons between 2017 and past years. At their 2017 meeting, the WACH Working Group voted on the status of the herd, agreeing upon the conservative stable level (WACH WG 2017, **Table 1**). While population numbers alone indicate liberal management, the Working Group supported maintaining conservative management due to the use of new technology and because a large proportion of the herd is currently young caribou that are still vulnerable to harsh winters (WACH WG 2017).

ADF&G attempted another photocensus in 2018, but could not complete one due to weather and insufficient aggregation of the caribou (NWARAC 2019). At their 2018 meeting, the WACH Working Group voted to maintain the herd's status at the conservative stable level since updated population data was not available. ADF&G completed a photocensus in July 2019, and results are currently being analyzed (Hansen 2019, pers. comm.).

Between 1970 and 2017, the bull:cow ratio exceeded critical management levels in all years except 1975, 2001, and 2014 (**Figure 3**). Reduced sampling intensity in 2001 likely biased the 2001 bull:cow ratio low (Dau 2013). Since 1992, the bull:cow ratios has trended downward (Dau 2015a). The average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004–2016). Additionally, Dau (2015a) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (Dau 2013, **Figure 4**). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters. Prichard (2009) found adult survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015a). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2016, the June calf:cow ratio averaged 71 calves:100 cows/year (**Figure 5**). In June 2016, 85 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992) (Dau 2016a).

Decreased calf survival through summer and fall and recruitment into the herd are likely contributing to the current population decline (Dau 2013, 2015a). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year (**Figure 5**). Fall calf:cow ratios declined from an average of 46 calves:100

cows/year between 1990-2003 to an average of 42 calves:100 cows/year between 2004-2016 (Dau 2015a, **Figure 5**). Since 2008, ADF&G has recorded calf weights at Onion Portage as an index of herd nutritional status. In September 2015, calf weights averaged 100 lbs., the highest average ever recorded (Parrett 2015b).

Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2003, SY:adult ratios averaged 20 SY:100 adults/year. Since the decline began in 2003 through 2016, SY:adult ratios have averaged 16 SY:100 adults/year (**Figure 5**). However, 23 SY:100 adults were observed during spring 2016 surveys, the highest ratio recorded since 2007 (Dau 2016b). 2017 and 2018 SY:adult ratios were also high at 22 SY:100 adults and 23 SY:100 adults, respectively (NWARAC 2019). The overwinter calf survival for the 2015 cohort (Oct. 2015-Jun. 2016) was 84% (Parrett 2016b). While 2016 indices suggest improvements in recruitment, the overall trend since the early 1980s has been downward (Dau 2015a, 2016b).

Cow mortality affects the trajectory of the herd (Dau 2011, 2013, NWARAC 2019). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004–2014 (Dau 2011, 2013, 2014, 2015a, **Figure 4**). Mortality rates declined in 2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may be due to a low and aging sample size as few caribou have been collared in the past two years (NWARAC 2019). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015a) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows. Dau (2013) attributed the high mortality rate for 2011–2012 (33%, **Figure 4**) to a winter with deep snows, which weakened caribou and enabled wolves to prey upon them more easily. Prior to 2004, estimated adult cow mortality only exceeded 20% twice, but has exceeded 20% in 7 out of 9 regulatory years between 2004 and 2012 (**Figure 4**). The annual mortality rate was 8% as of April 2016 (Dau 2016b). This may fluctuate substantially throughout the year based on changing local conditions and harvest levels. Dau (2015a) indicates that mortality rates may also change in subsequent management reports as the fate of collared animals is determined, and that these inconsistencies are most pronounced for the previous 1–3 years.

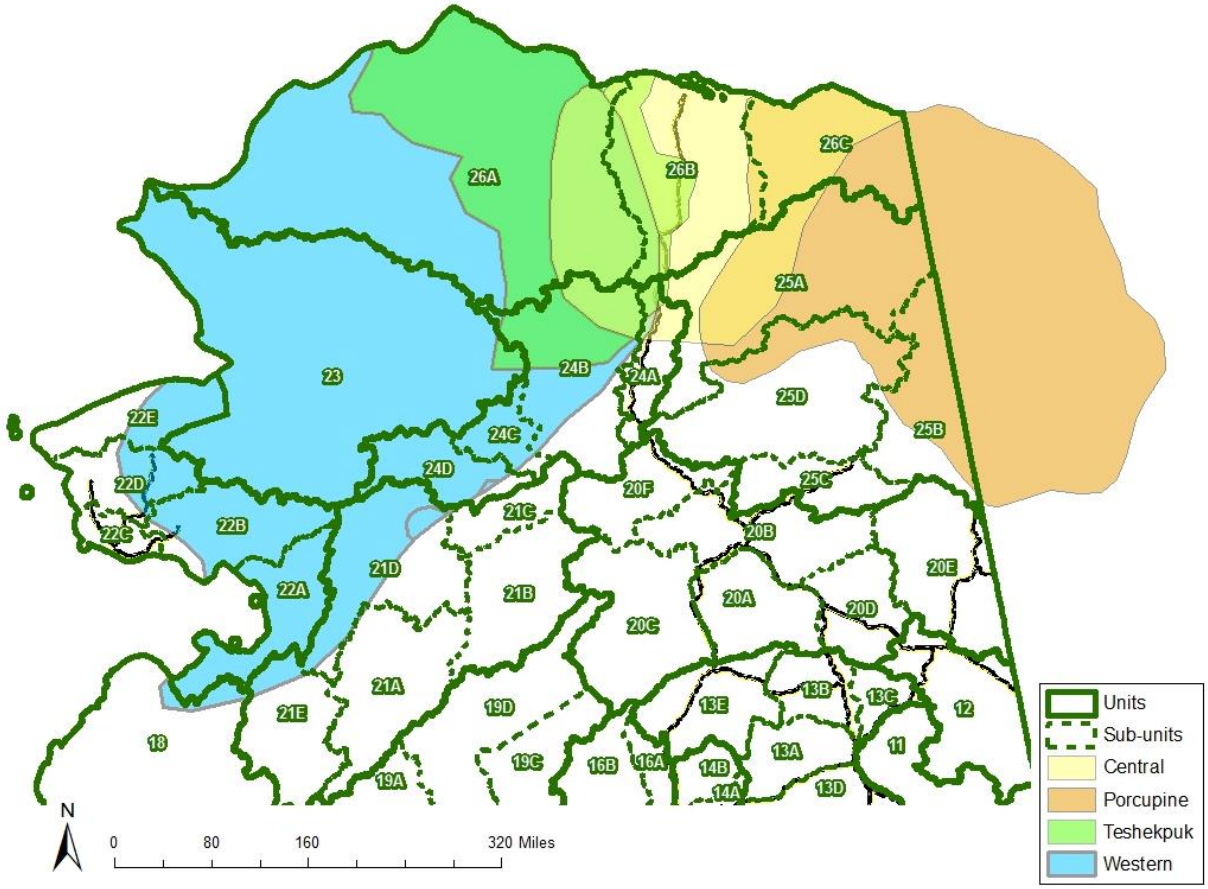
Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. Predation, particularly by wolves, accounted for the majority of natural mortality (Dau 2013). However as the WACH has declined and estimated harvest has remained relatively stable, the percentage of mortality due to hunting has increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (Dau 2014). In previous years (1983–2013), the estimated hunting mortality exceeded 30% only once in 1997-1998 (Dau 2013). Additionally, Prichard (2009) and Dau (2015a) suggest that harvest levels and rates of cows can greatly impact population trajectory. If bull:cow ratios continue to decline, harvest of cows may increase, exacerbating the current population decline.

Dau (2015a) cites fall and winter icing events as the primary factor initiating the population decline in 2003. Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change, and disease may also be contributing factors (Dau 2015a, 2014). Joly et

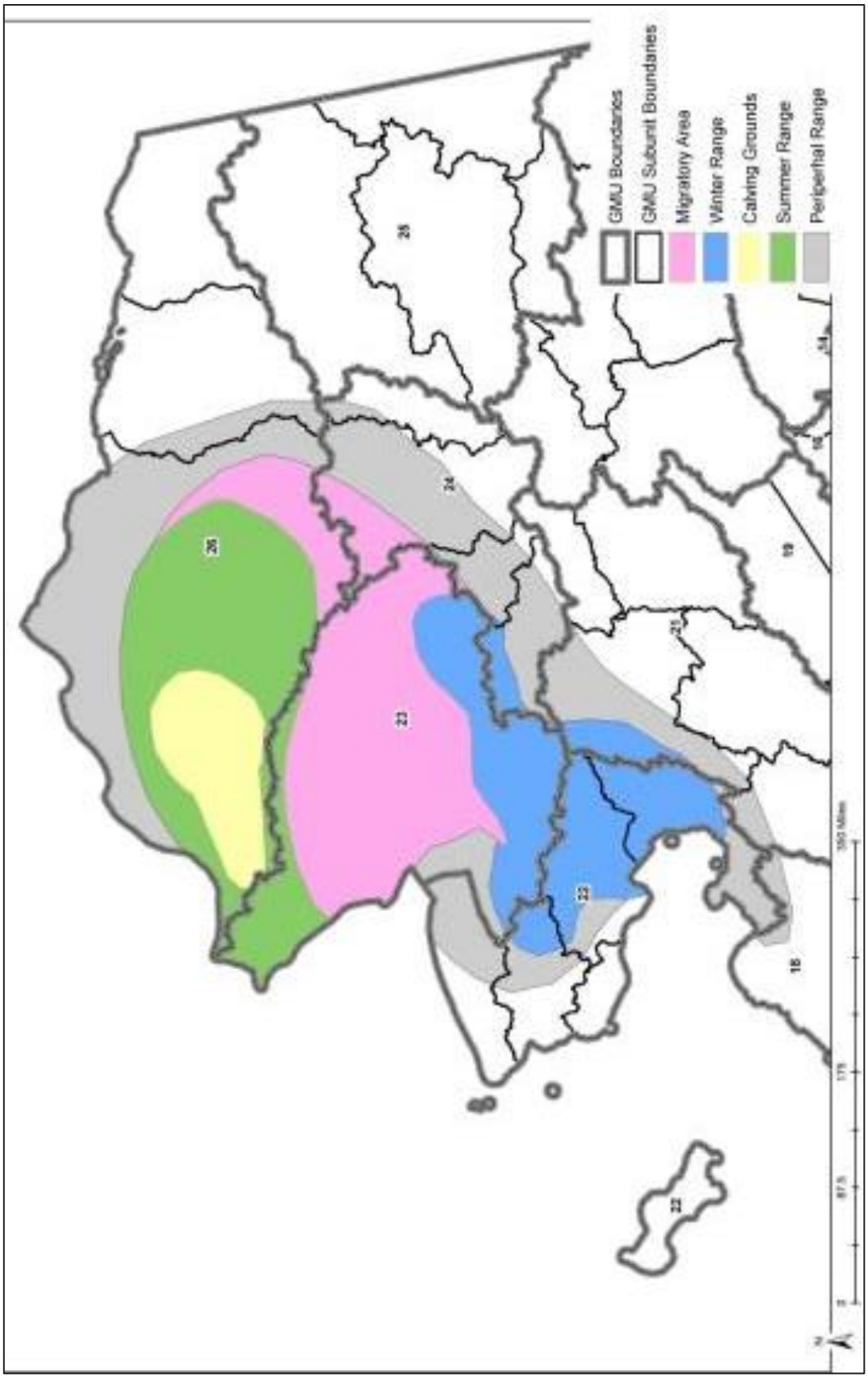
al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH. Dau (2011, 2014) reported that degradation in range condition is not thought to be a primary factor in the decline of the herd because animals have generally maintained good body condition since the decline began. Body condition is assessed on a subjective scale from 1-5. The fall body condition of adult females in 2015 was characterized as "fat" (mean= 3.9/5) with no caribou being rated as skinny or very skinny (Parrett 2015b). However, the body condition of the WACH in the spring may be a better indicator of the effects of range condition versus the fall when the body condition of the herd is routinely assessed and when caribou are in prime condition (Joly 2015, pers. comm.).

Habitat

Caribou feed on a wide variety of plants including lichens, fungi, sedges, grasses, forbs, and twigs of woody plants. Arctic caribou depend primarily on lichens during the fall and winter, but during summer they feed on leaves, grasses and sedges (Miller 2003).



Map 3. Herd overlap and ranges of the WACH, TCH, CACH, and PCH.



Map 4. Range of the WACH.

Table 1. Western Arctic Caribou Herd management levels using herd size, population trend, and harvest rate (WACH Working Group 2011, 2015).

Management and Harvest Level	Population Trend			Harvest Recommendations May Include:
	Declining Low: 6%	**Stable Med: 7%**	**Increasing High: 8%**	
Liberal	Pop: 265,000+	Pop: 230,000+	Pop: 200,000+	• Reduce harvest of bulls by nonresidents to maintain at least 40 bulls: 100 cows • No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 40 bulls:100 cows
	Harvest: 16,000-22,000	Harvest: 16,000-22,000	Harvest: 16,000-22,000	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	• No harvest of calves • No cow harvest by nonresidents • Restriction of bull harvest by nonresidents • Limit the subsistence harvest of bulls only when necessary to maintain a minimum 40:100 bull:cow ratio
	Harvest: 12,000-16,000	Harvest: 12,000-16,000	Harvest: 12,000-16,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	• No harvest of calves • Limit harvest of cows by resident hunters through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 40 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to nonqualified users may be necessary
	Harvest: 8,000-12,000	Harvest: 8,000-12,000	Harvest: 8,000-12,000	
Critical Keep Bull:Cow ratio ≥ 40 Bulls:100 Cows	Pop: < 130,000	Pop: < 115,000	Pop: < 100,000	• No harvest of calves • Highly restrict the harvest of cows through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 40 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to nonqualified users may be necessary
	Harvest: 6,000-8,000	Harvest: 6,000-8,000	Harvest: 6,000-8,000	

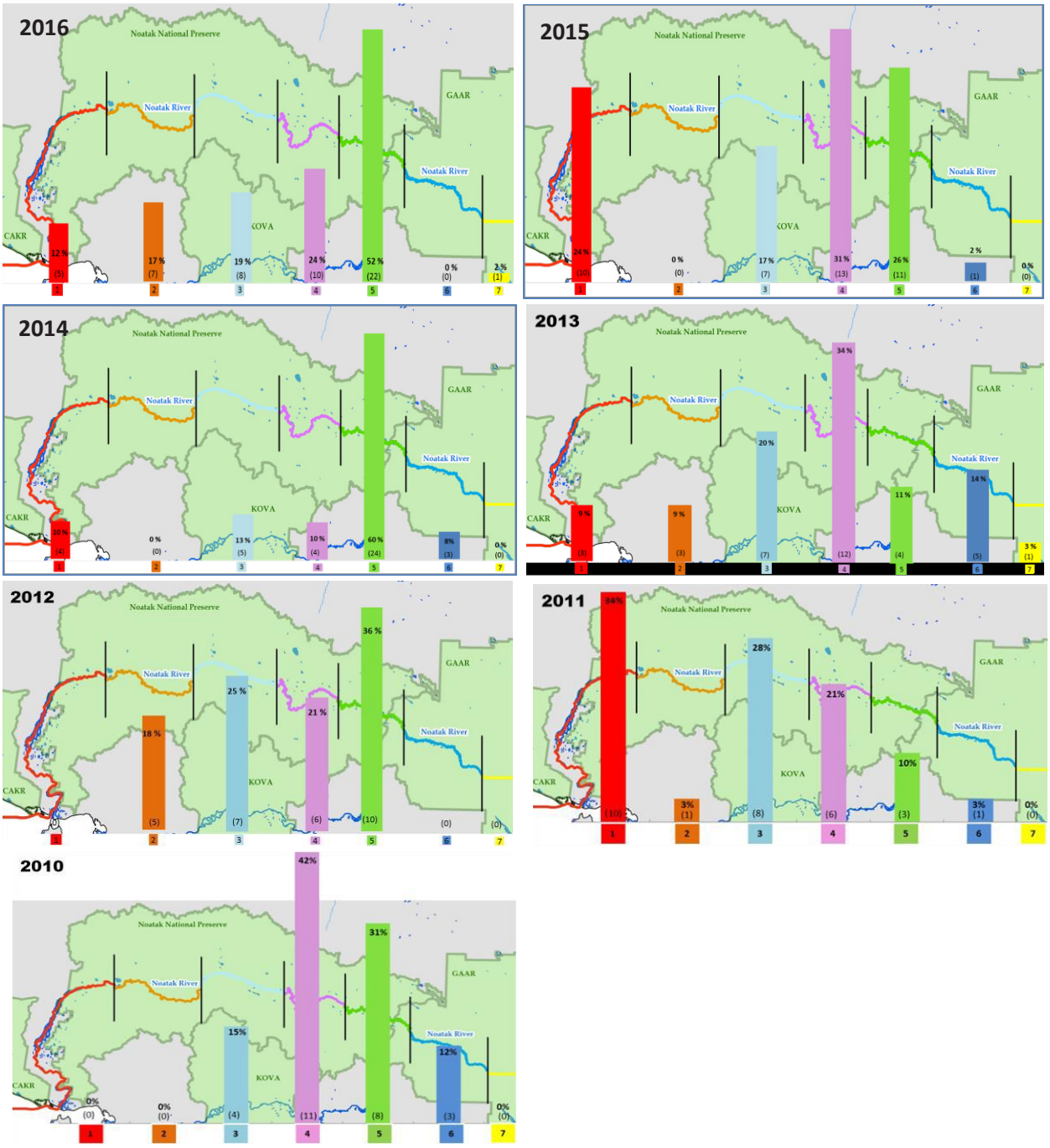


Figure 1. Distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are provided. The river is divided into seven (lowest number) color-coded segments which are displayed in the background. The middle five segments are 100 river kilometers long, while the westernmost segment (red) is 200 km (before extending into the Chukchi Sea) and the easternmost (yellow) runs as far east as WAH caribou are known to migrate. The number of caribou with GPS collars ranged from 39-79 caribou/year with later years having more collared caribou than earlier years (Joly and Cameron 2017).

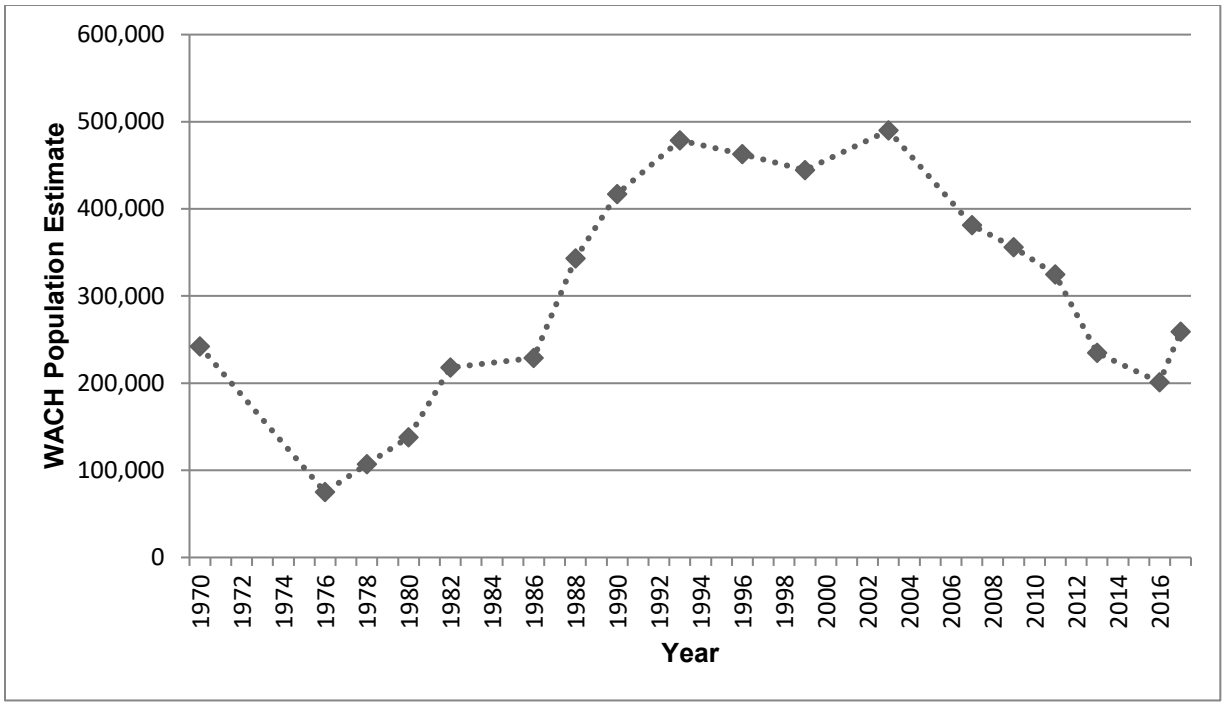


Figure 2. The WACH population estimates from 1970–2017. Population estimates from 1986–2017 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016a, Parrett 2017a)**.**

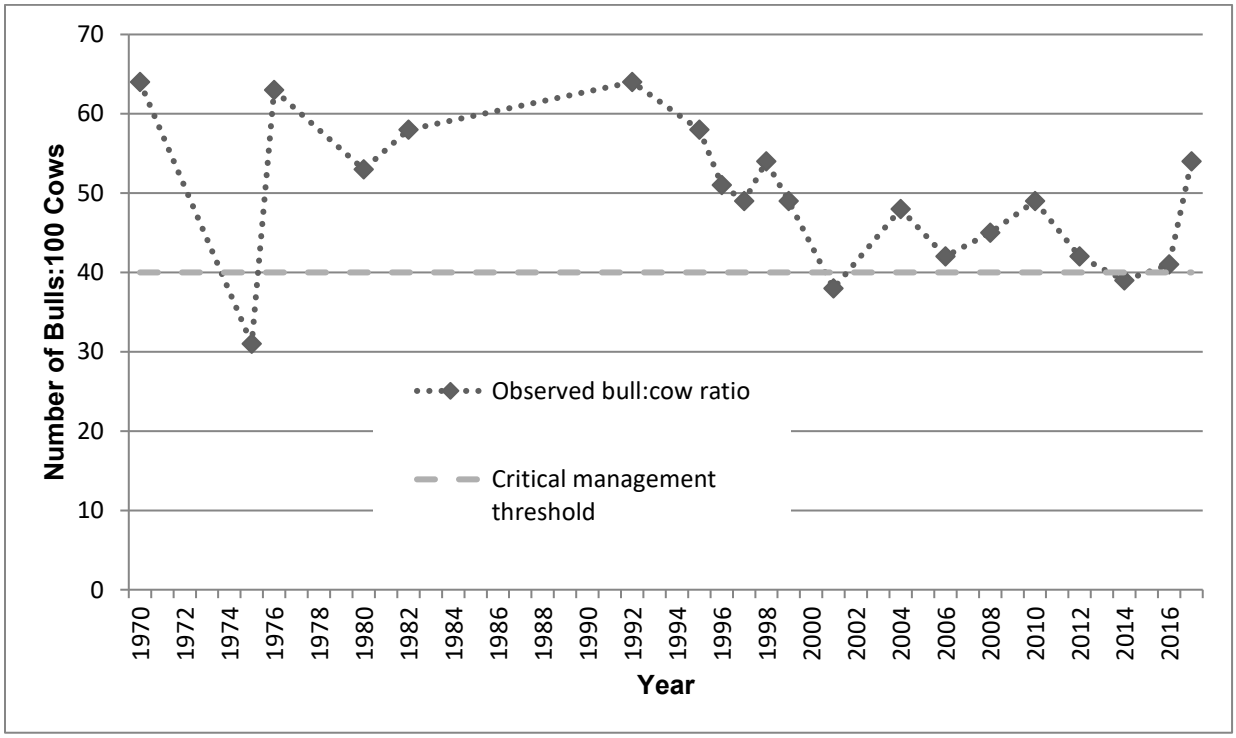


Figure 3. Bull:Cow ratios for the WACH (Dau 2015a, ADF&G 2017c, Parrett 2017a).

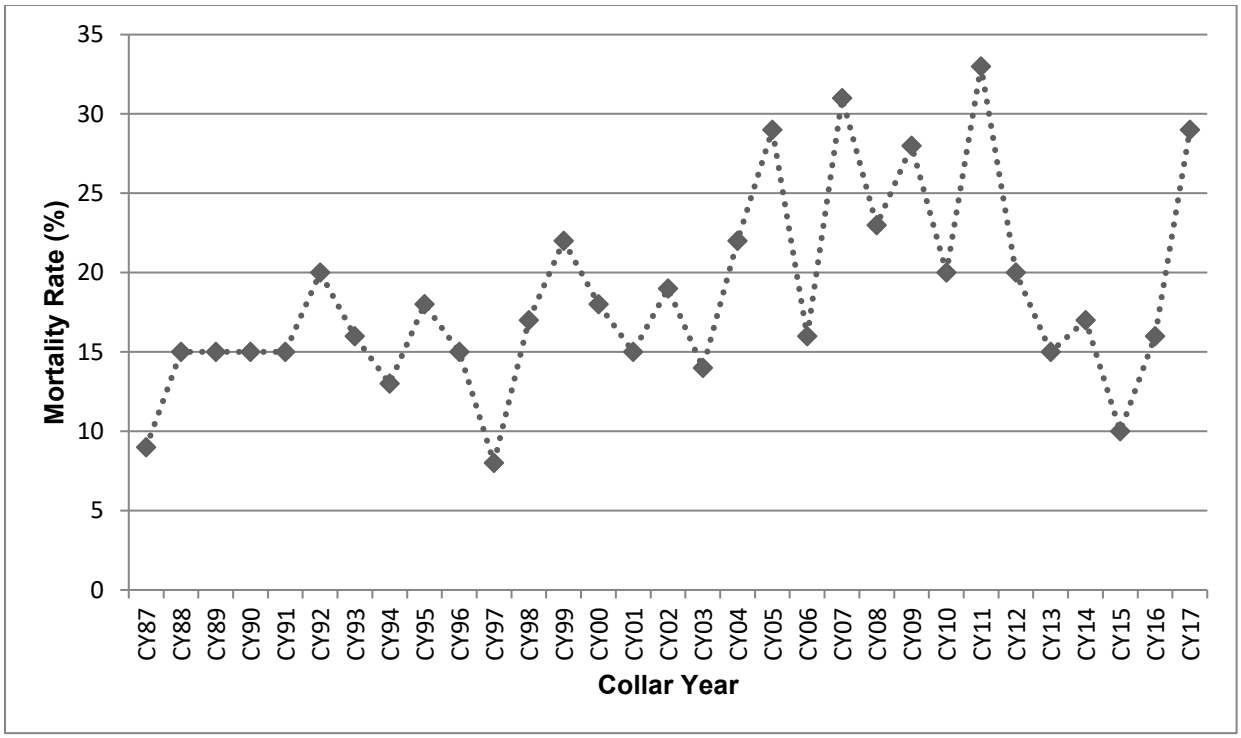


Figure 4. Mortality rate of radio-collared cow caribou in the Western Arctic caribou herd (Dau 2013, 2015a, 2016b, NWARAC 2019). Collar Year = 1 Oct-30 Sept.

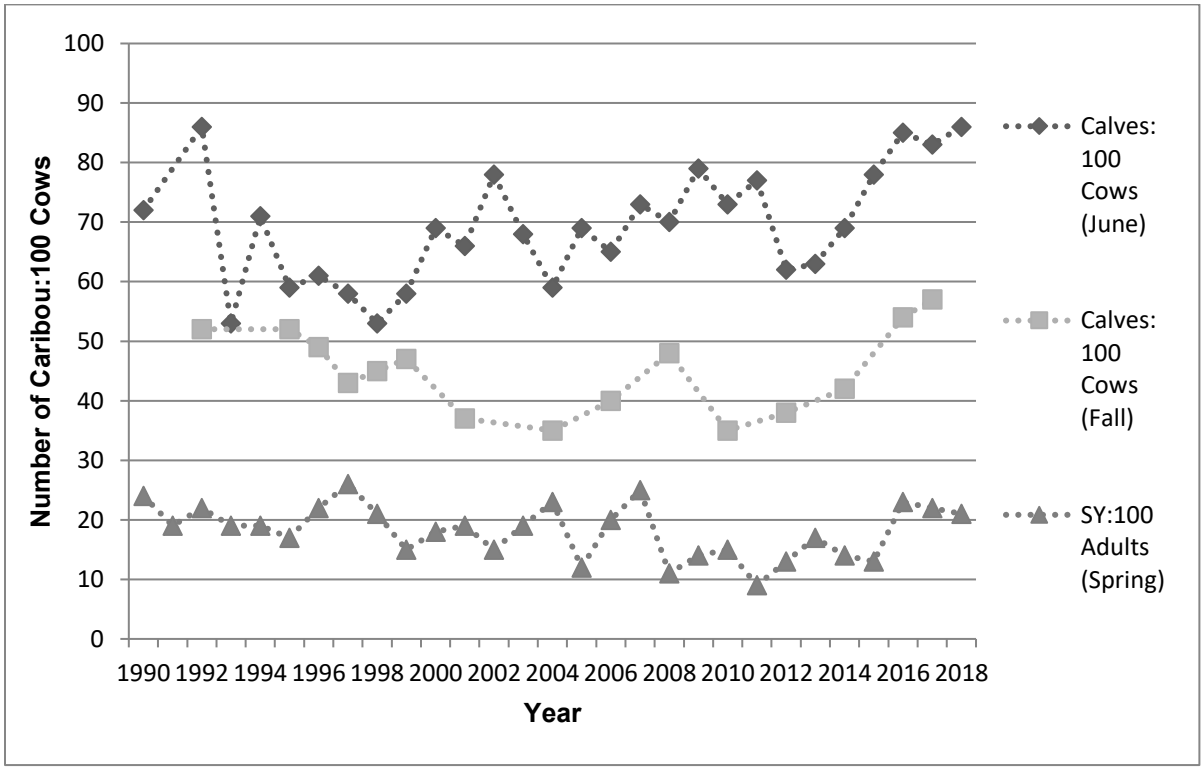


Figure 5. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015a, 2016a, ADF&G 2017c, Parrett 2017a, NWARAC 2019). Short yearlings are 10-11 months old caribou.

Cultural Knowledge and Traditional Practices

Meeting the nutritional and caloric needs of Arctic communities is vitally important and is the foundation of subsistence activities. However, the meaning of subsistence extends beyond human nutrition for Alaska's native peoples. Holthaus describes subsistence as the base on which Alaska Native cultures establish their identities through "philosophy, ethics, religious belief and practice, art, ritual, ceremony, and celebration" (2013: 70).

Earnest Burch describes the importance of caribou for the people of Northwest Alaska (Burch 1998). Caribou have been a primary resource for the Iñupiat of the Northwest Arctic Region for thousands of years. Caribou bones dating from 8,000 to 10,000 years ago have been excavated from archeological sites on the Kobuk River (ADF&G 1992). Historically, during fall and spring caribou migrations, people built "drive fences" out of cairns, bundles of shrubs, or upright logs. These fences were sometimes several miles long and two to three miles wide. Ideally, the closed end of the fence crossed a river, and caribou were harvested while crossing the river and retrieved later; or the fence would end in a corral where caribou were snared and killed with spears (Burch 2012). Burch notes: "The landscape of Northwest Arctic, especially in hills and mountains, is littered with the remains of drive fences that were in every stage of construction when they were abandoned" (2012:40).

Depending on where they were based, most Northwest Arctic Inupiaq Nations relied upon caribou as a primary food source and for their hides. Hides provided the best clothing material available to the Inupiat. Burch documents a preference for the late summer coats of caribou cows and calves, which were seen as providing both the softness and quality needed for high quality clothing, after the summer shedding and before acquiring a shaggy winter coat. While bulls were targeted for their fat stores and meat, cows and calves were targeted for their hides, which were considered prime during the early part of August (Burch 1998). The summer hunt's primary objective was the acquisition of hides. "It reportedly took two calf skins to make one parka, and every hunter tried to get at least twenty of them" (Burch 1998:163). Not only were the hides necessary to keep a family clothed during the winter; they also served as an important trade good.

The WACH population declined rapidly in the Northwest Arctic beginning in the late 1800s. At its low point, its range had shrunk to less than half its former size. Famine ensued, primarily due to the absence of caribou. In the early 1900s, reindeer were introduced to fill the need for food and hides. The WACH began to rebound in the 1940s. Caribou continue to be the most important land animal consumed in this region (Burch 1998, ADF&G 1992). Foote wrote about caribou hunting in the Noatak region sixty years ago, noting that life would not be possible in Noatak without this source of meat (1959, 1961).

Caribou were traditionally harvested any month of the year they were available in the Northwest Arctic Region. The objective of the summer hunt was to obtain the hides of adult caribou with their new summer coats. The fall hunt was to acquire large quantities of meat to freeze for winter (Burch 1994). Hunt timing changed—and continues to change— from year to year according to the availability of caribou and their migration paths (ADF&G 1991). Ideally, caribou harvesting occurs when the weather is cool enough to prevent spoilage of meat. If not, meat is frozen for later use. Caribou can be harvested in large

numbers, when available, and can be transported back to villages by boat before freeze-up. Hunters search for caribou and attempt to intercept them at known river crossings.

Prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Braem et al. 2015, Georgette and Loon 1993). After freeze-up, small groups of caribou that have over-wintered may be harvested by hunters in areas that are accessible by snowmachine. Braem et al. explain, "Hunters harvest cows during the winter because they are fatter than bulls" (2015:141). Today, communities in the southern portion of Unit 23 (Buckland, Deering) harvest caribou in the winter and spring, while the other communities in Unit 23 harvest caribou in the fall, winter, and spring. Kivalina also harvests caribou in July (ADF&G 1992).

The present-day human population in Unit 23 includes 11 regional Inupiaq groups (Burch 1998). Kotzebue is the regional hub of transportation and commerce and is the home to the majority of non-Natives in the region. The population of Unit 23 was approximately 7,500 in 2010, according to the U.S. Census (ADOLWD 2016). Caribou continue to dominate the subsistence harvest of the region. In household harvest surveys conducted between 1964 and 2012, caribou were often the most harvested species, more than any other wild resource, in lbs. of edible weight (**Appendix 1**) (ADF&G 2016a). Based on these surveys, in a typical study year, the harvest of caribou was between 100 and 200 lbs. per person in northwest Alaska (**Appendix 1**) (ADF&G 2016a).

Present-day use of caribou calves appears to be limited, but does occur opportunistically. When calves are harvested, they can provide a special food for elders. At the winter 2019 Northwest Arctic Council meeting, one member from Kotzebue characterized local use of caribou calves: "We do use calves for baby garments, little mukluks and outfits and the meat is good for elders. They don't like tough food…these are desired food for elderly that is soft and tender, especially those in the long-term care" (NWARAC 2019:185). This member indicated that in cases in which calves are orphaned, they could go to good use by the community.

At the fall 2015 Northwest Arctic Council meeting, in the context of discussing cow closures due to heightened conservation concerns at that time, two members stated that local hunters do not take calves or want to take calves (NWARAC 2015). Elders in the region have participated in efforts to educate hunters to avoid orphaning caribou calves: at the fall 2018 Northwest Arctic meeting, Kotzebue community member Cyrus Harris read guidelines from the Caribou Hunter Safety Group into the record, which included advice to hunters about how to avoid accidentally taking cows with calves:

"Take your time. Observe caribou groups before you approach. Pick out the animals you want to harvest. Look for animals that are fat and in good shape before you shoot…When mature bulls are in the rut, younger bulls and barren cows can still provide good meat. Don't shoot cows with calves. If you want to take a cow, wait to see if it has a calf with it" (NWARAC 2018: 83).

There was discussion at the winter 2019 Northwest Arctic Council meeting regarding whether or not to submit a proposal mirroring WP20-44, which would rescind the ban on calf harvest. Council members explored the value of being able to take calves that have been orphaned, but had concerns about the feasibility of distinguishing between orphaned and merely temporarily separated calves in practice. There was also testimony regarding the possibility that orphaned calves may survive on their own or be adopted by

other cows in the herd, as has been observed by reindeer herders in the region. The member who had initially made a motion to submit a proposal to allow calf harvest withdrew her motion after hearing testimony from other Council members. The motion was still voted upon and failed unanimously.

Harvest History

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population is stable is calculated as 7% of the estimated population (WACH working group 2011, Parrett 2017b, pers. comm.). In 2017, the WACH harvestable surplus was 18,130 caribou (7% of 259,000 caribou). Assuming the herd remained stable in 2018 and 2019, the harvestable surplus remains 18,130 caribou. This is a substantial increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015a, Dau 2015a). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015a). Dau (2015a:14-29) states, "even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH."

Caribou harvest by local hunters is estimated from community harvest surveys, if available, and from models developed by A. Craig with ADF&G's Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou, and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015a). In 2015, Craig's models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig's models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015a). (Note: no model accurately reflects harvest numbers). This analysis only considers the updated harvest estimates using Craig's new model as cited in Dau (2015a). Caribou harvest by nonlocal residents and nonresidents are based on harvest ticket reports (Dau 2015a). Hunters considered local by ADF&G are functionally identical to Federally qualified subsistence users (e.g. Residents of St. Lawrence Island are technically Federally qualified subsistence users, but do not frequently harvest Western Arctic caribou) (**Map 1**).

From 2000–2014, the average estimated total harvest from the WACH was 11,984 caribou/year, ranging from 10,666-13,537 caribou/year (Dau 2015a, **Figure 6**). These harvest levels are within or below the conservative harvest level specified in the WACH Management Plan (**Table 1**). In 2015 and 2016, total local harvest estimates increased to 14,360 caribou and 14,971 caribou, respectively (Hansen 2019, pers. comm.). While these harvest estimates are below the 2017-2019 harvestable surpluses, they exceed the 2016 harvestable surplus. These are the most recent estimates available for local harvest. Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015a).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 23 account for approximately 58% of the total harvest on average (**Figure 7**, ADF&G 2017c). Comparison of caribou harvest by community from household survey data (**Appendix A)** with **Figure 1** demonstrates that local community harvests parallel WACH availability rather than population trends. For example, Ambler only harvested 325 caribou when the WACH population peaked in 2003, but harvested 685 caribou in 2012

when most of the WACH migrated through eastern Unit 23. Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23. Harvest increased substantially (360 caribou) the following year when 37% of the GPS-collared caribou (and thus, a greater proportion of the WACH) migrated through western Unit 23.

Between 1998 and 2018, annual reported caribou harvest in Unit 23 ranged from 168-676 caribou (**Figure 8**). Over the same time period, reported harvest by non-Federally qualified users ranged from 131-657 caribou. The lowest reported harvest occurred in 2016 when all Federal public lands in Unit 23 were closed to non-Federally qualified users, but before registration permits were required for Federally qualified subsistence users. In 2017, the BOG began requiring registration permits, which is reflected in the greater number of reported caribou harvest by Federally qualified subsistence users (**Figure 8**). On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015a).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, most local, subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015a, Fix and Ackerman 2015). In Unit 23, caribou are generally available during fall migration. In recent years, caribou migration has occurred later in fall, resulting in subsistence harvest also occurring later.

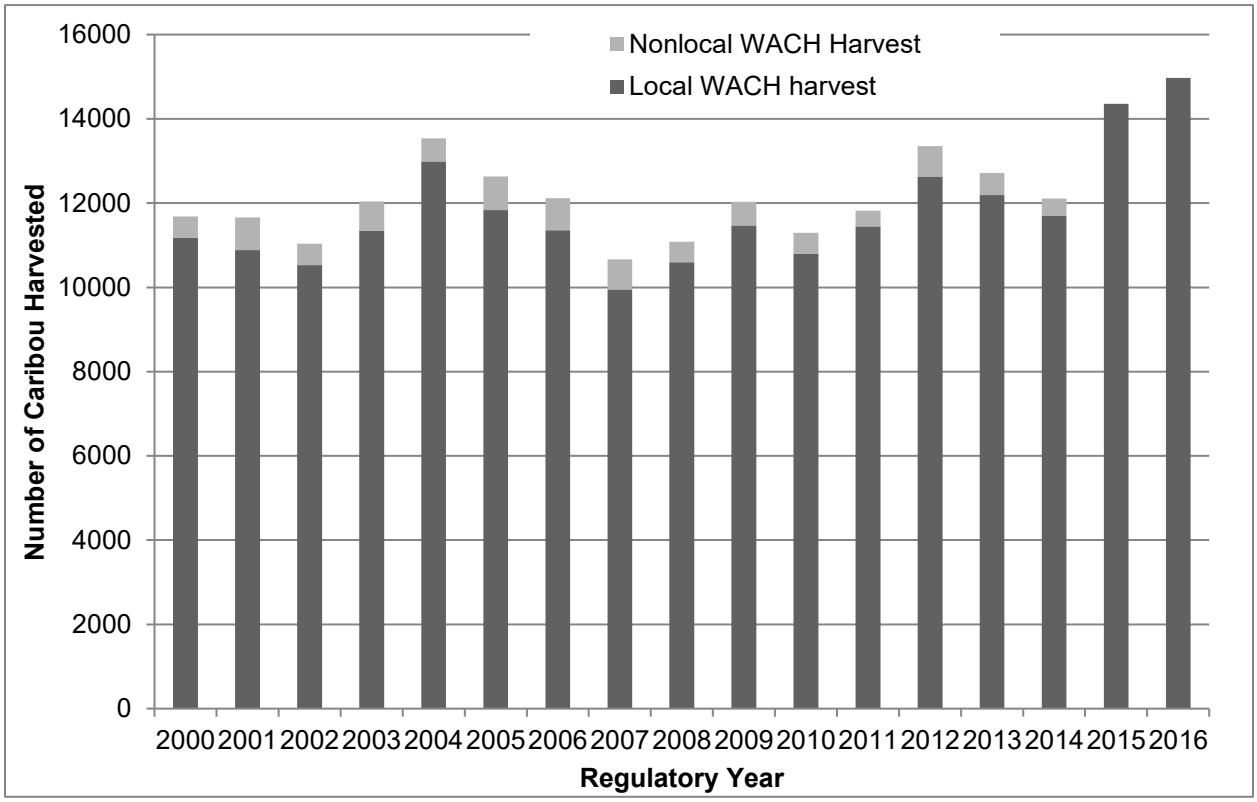


Figure 6. Estimated number of caribou harvested from the WACH by residency (Dau 2015a, Hansen 2019, pers. comm.).

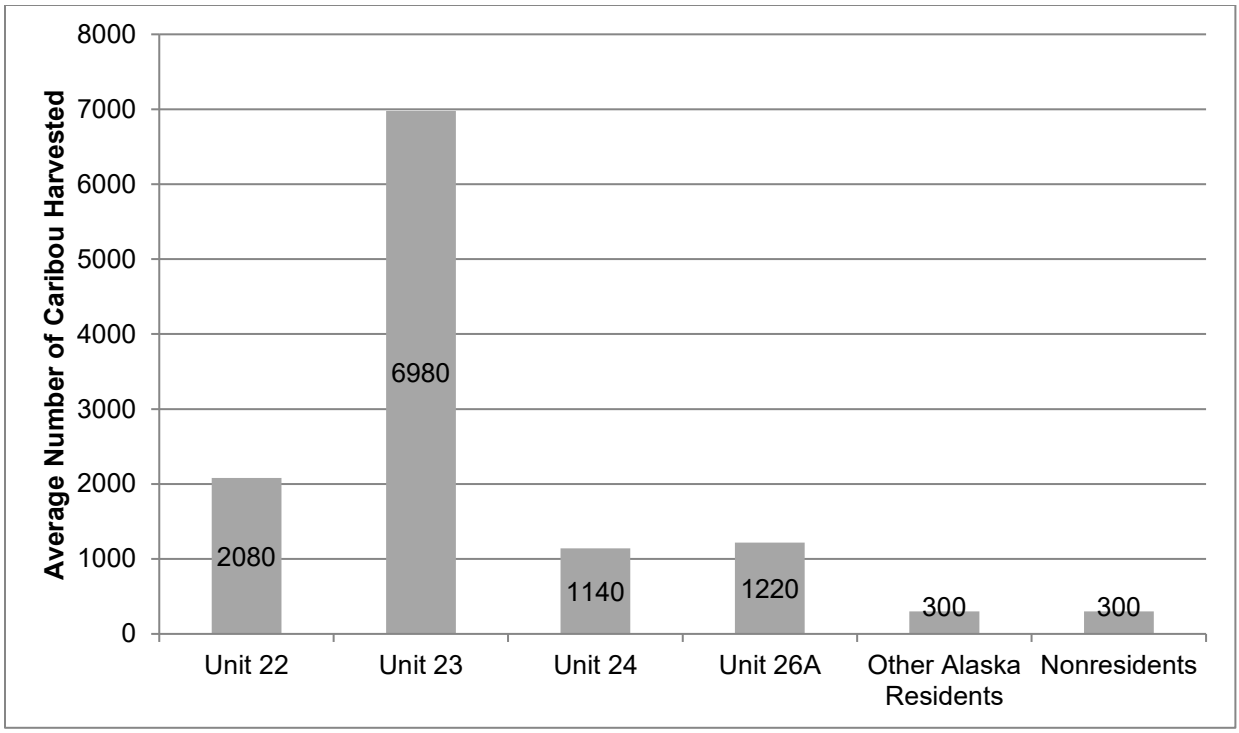


Figure 7. Average number of caribou harvested by unit and residency from 1998-2015 (ADF&G 2017c).

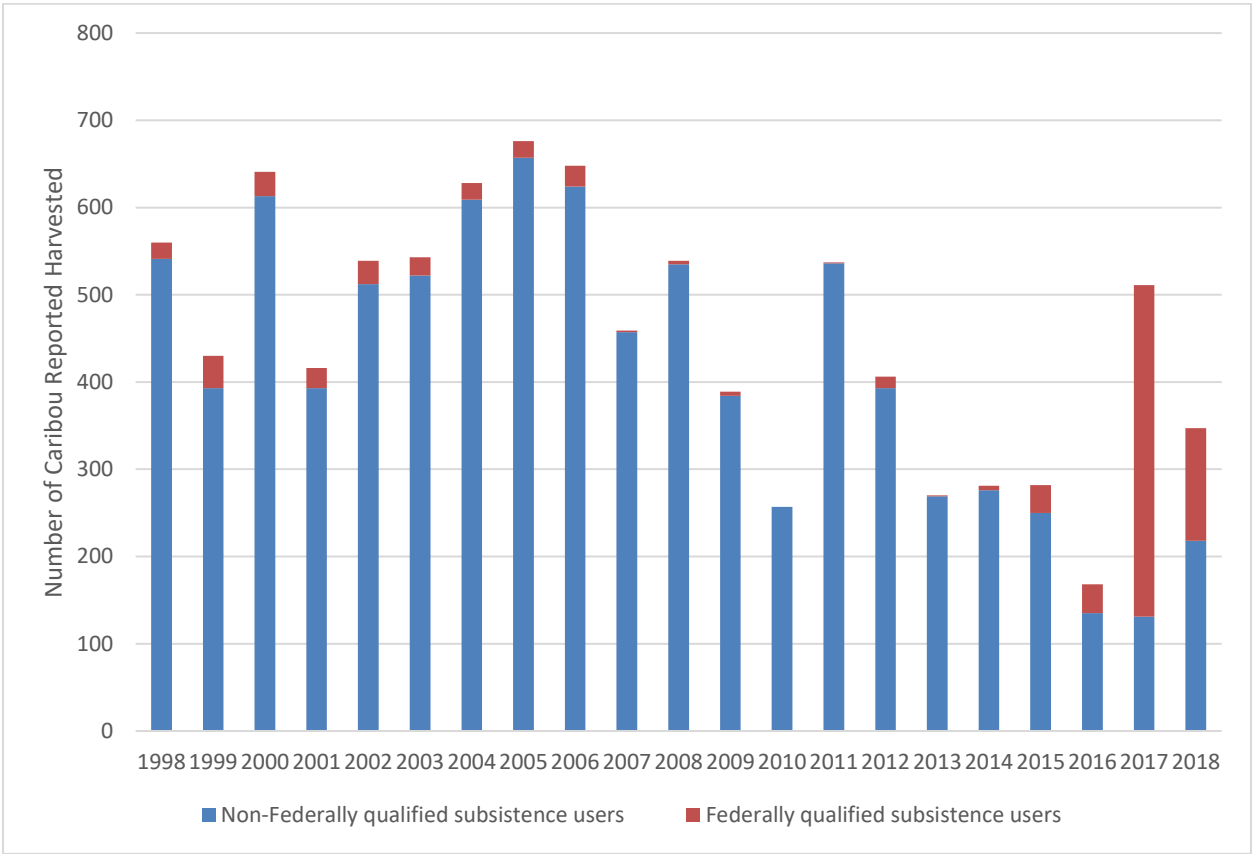


Figure 8. Reported caribou harvest in Unit 23 (WinfoNet 2018, 2019).

Other Alternatives Considered

One alternative considered was to maintain the prohibition on calf harvest. As described in the Cultural Knowledge and Traditional Practices of this analysis, some members and constituents of the Northwest Arctic Council have voiced opposition to the practice of harvesting caribou calves (NWARAC 2015; NWARAC 2018). Supporting calf harvest has the potential to undermine efforts by Kotzebue elders to educate hunters about respectful practices of selecting and hunting caribou that minimize the number of orphaned calves. Those Council members and constituents who have opposed calf harvest on record have indicated that not taking calves is a rule which informs their hunting and which contributes to the core identity of some subsistence hunters in the Northwest Arctic Region.

Under this alternative, the Office of Subsistence Management (OSM) recommends a year-round bull season for caribou but opposes permitting calf harvest in Unit 23. One of the purposes of the Alaska National Interests Land Conservation Act (ANILCA) is "to provide the opportunity for rural residents engaged in a subsistence way of life to do so" (§802(1)). Thus, increased harvest opportunity is supported, but so is practicing subsistence as a way of life, as defined locally. However, it is for the Councils, rather than OSM, to define what constitutes subsistence as a way of life for local constituents. Therefore, OSM considered and rejected this alternative. Traditions of taking or not taking calves may not be generalizable for all residents of the Northwest Arctic region as evidenced by differing opinions between members of the Northwest Arctic Council and the Kotzebue AC and WACH working group. The Northwest Arctic Council will have the opportunity to consider and discuss these proposals at their Fall 2019 meeting, and can choose to oppose or support these proposals on the record at that time.

Effects of the Proposal

If the Board adopts Proposal WP20-43/44/45/46, the bull caribou season would be open year-round and the harvest of calves would be permitted in Unit 23. This would increase harvest opportunity for Federally qualified subsistence users. No conservation concerns exist for allowing bull harvest during rut while calf harvest presents minimal conservation concerns.

Eliminating the bull closure would allow harvest of young bulls, which would reduce harvest pressure on cows, helping to grow the herd. As the timing of fall caribou migration has changed in recent years, it would also provide more harvest flexibility, alleviating pressure on Federally qualified subsistence users to harvest caribou during a particular timeframe (NWARAC 2019). While the risk of harvesting an unpalatable bull in rut exists, Federally qualified subsistence users had been selectively harvesting bulls before the closure was adopted in 2016. Furthermore, targeting younger bulls during rut is a recommended practice. The Native Village of Kotzebue (2018) produced an education flyer about winter caribou hunting, which included a recommendation to harvest younger bulls when mature bulls are in rut. The NANA regional corporation submitted comments to the BOG in 2015 in opposition to the bull closure to allow shareholders to harvest younger caribou for food security (Kramer 2015).

Eliminating the prohibition on calf harvest would allow the harvest of orphaned calves that may otherwise succumb to predation. However, it can be difficult to identify orphaned calves as caribou are scattered

across the landscape, and calves and cows can be separated by substantial distances. Additionally, orphaned calves may survive, especially if they remain with the herd. Russell et al. (1991) found survival rates of orphaned and non-orphaned calves were 63% and 78%, respectively, indicating orphaned calves still have a good chance of survival, although the sample size for orphaned calves was very small. The timing of abandonment also influences survival. Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Fest-Bianchet 2014). As caribou migration has been occurring later in the fall, subsistence users are harvesting caribou in November rather than September, which could improve the chances of orphaned calves surviving. Additionally, educational initiatives by Unit 23 Caribou Hunter Success Working Group may help reduce the number of orphaned calves. This group is working to educate hunters on better hunting practices, including taking the time to identify cows with calves (Atkinson 2019, pers. comm.). Finally, a member of the public also testified that other cow caribou will adopt orphaned calves (NWARAC 2019).

Allowing calf harvest may also reduce wanton waste. A Northwest Arctic Council member noted that he has seen dead calves in the field, presumably mistakenly shot and then left since they are illegal to harvest (NWARAC 2019). The ADF&G caribou biologist stated many orphan calves have ended up around Kotzebue during the hunting season, but have been unavailable to harvest. He collared a few of these orphaned calves, all of which died shortly thereafter. He also stated that he receives many reports from hunters of orphaned and wounded calves out in the field that are not legally available for harvest (NWARAC 2019). In regards to the prohibition on the take of cows accompanied by calves, an NPS staff biologist voiced concern that unethical hunters could harvest calves and then harvest its mother, who would no longer be accompanied by a calf (NWARAC 2019).

The Western Arctic and Teshekpuk caribou herds are the only caribou herds in Alaska where calf harvest is prohibited. These restrictions were adopted by the BOG in 2015 and the Board in 2016 as conservation measures when both herds were declining. The WACH management plan also recommends prohibiting calf harvest when the herd is within the conservative management level. However, calves comprise a very small portion of the harvest. In his population model, Prichard (2009) assumed calves comprised only 2% of the total annual WACH harvest, which would not affect the population trajectory of the WACH. As most calves die within their first year and few hunters target calves, calf harvest may be compensatory mortality, although Prichard (2009) assumed all harvest mortality to be additive. While calf recruitment influences herd abundance and population trajectory, Prichard (2009) found adult survival to have the largest impact on WACH population size. Prohibiting cow harvest would have a greater impact on herd conservation than prohibiting calf harvest.

While calves were traditionally harvested for specific purposes, people no longer target calves in the Northwest Arctic region (NWARAC 2015, 2019). The Northwest Arctic Council discussed submitting a proposal to allow calf harvest at their winter 2019 meeting. One member mentioned that calves were traditionally used for garments and as food for elders. However, most members strongly opposed calf harvest due to conservation concerns and personal values, and the Council voted unanimously not to submit a proposal (NWARAC 2019).

§802(1) of ANILCA states, "consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands." While increasing harvest opportunity by liberalizing harvest limits and season lengths can certainly lessen adverse impacts on rural residents, OSM recognizes social and cultural concerns also affect the satisfaction of subsistence needs. While allowing calf harvest should not affect the conservation of the WACH and would increase harvest opportunities, maintaining the prohibition on calf harvest may be warranted due to socio-cultural concerns. Northwest Arctic Council members have stated on several occasions that no one hunts calves in the Northwest Arctic region and that hunting calves is wrong and unethical because calves are the future of the herd (NWARAC 2015, 2019). While the Northwest Arctic Council represents interests and concerns of Federally qualified subsistence users to the Board, subsistence users on the Kotzebue AC and the WACH Working Group support allowing calf harvest in the Northwest Arctic to utilize orphaned calves. The Northwest Arctic Council will have another opportunity to comment and vote on this issue at its 2019 fall meeting after considering the full analysis as well as any public and tribal comments.

The BOG will consider similar proposals at its Arctic/Western Region meeting in January 2020. If both the BOG and the Board adopt proposals to eliminate the bull closure and the prohibition on calf harvest, State and Federal regulations would maintain alignment, reducing user confusion. If only the BOG adopts these changes, Federal regulations would be more restrictive than State regulations, contrary to the rural subsistence priority mandated by ANILCA. However, Federally qualified subsistence users would still be able to harvest bulls year-round as well as calves under State regulations, except in National Parks and Monuments and the area closed to non-Federally qualified users around Noatak (see Federal regulation). Alternatively, if only the Board adopts these changes, Federal regulations would provide for a rural subsistence priority on Federal public lands only. Given that gravel bars below the mean high water mark are under State jurisdiction and that caribou are commonly harvested along rivers, lifting these restrictions under Federal regulations only could result in substantial user confusion and law enforcement concerns. Therefore, the BOG's decision on the bull closure and prohibition on calf harvest could affect the outcome of Proposals WP20-43/44/45/46.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-46 and **take no action** on Proposals WP20-43, WP20-44, and WP20-45.

Justification

Adopting Proposal WP20-46 increases harvest opportunity for Federally qualified subsistence users. Eliminating the bull closure may help grow the WACH by reducing harvest pressure on cows. As most people do not target calves, calf harvest is expected to be very low and should not affect the conservation of the herd. Additionally, allowing calf harvest may reduce wanton waste by allowing mistakenly shot calves to be legally salvaged, and would permit harvest of orphaned calves.

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Appendix 1

Estimated total caribou harvest by community, per capita caribou harvest by community, and data sources for Unit 23: Western Arctic caribou herd (ADF&G 2015).

Unit 23

Community	Year/Period	Est Caribou Harv.	# caribou per capita	Source
Ambler	2003	325	1.12	Georgette et al. 2005, unpublished data
	2009	456	1.75	Braem 2012
	2012	685	2.54	Braem et al. 2015
Buckland	2003	637	1.56	Magdanz et al. 2011
	2009	561	1.30	Braem 2012
Deering	1994	142	0.96	Magdanz et al. 2002
	2007-2008	182	1.37	Braem 2011
	2011-2012	237	1.91	Braem 2011
	2013	393	2.85	ADF&G unpublished data
Kiana	1999	488	1.23	ADF&G unpublished data
	2006	306	0.77	Magdanz et al. 2011
	2009	440	1.18	Braem 2012
Kivalina	1982	346	0.48	CSIS
	1983	564	0.78	CSIS
	1992	351	0.49	CSIS
	2007	268	0.67	Magdanz et al. 2010
	2010-2011	86	0.23	Braem et al. 2014
Kobuk	2004-2005	134	1.06	ADF&G unpublished data
	2009	210	1.72	Braem 2012
	2012	119	0.84	Braem et al. 2015
Kotzebue	1986	1917	0.71	Georgette and Loon 1993
	1991	3782	1.04	CSIS
	2001	2376	0.77	Whiting 2003
	2002	1719	0.56	Whiting 2003
	2003	1915	0.61	Whiting 2003
	2012-2013	1804	0.56	CSIS
	2013-2014	1629	0.51	ADF&G unpublished data
Noatak	1994	615	1.62	Magdanz et al. 2002
	1999	683	1.61	Georgette et al 2000., unpubd data
	2002	410	0.90	Georgette et al. 2004, unpubd data
	2007	441	0.90	Magdanz et al. 2010
	2010	66	0.13	Braem et al. 2014
	2011	360	0.66	Mikow et al. 2014
Noorvik	2002	988	1.46	Georgette et al. 2004, unpubd data
	2008	767	1.19	Braem et al. 2012
	2012	851	1.36	CSIS

-continued-

Unit 23, continued

Community	Year/Period	Est Caribou Harv.	# caribou per capita	Source
Point Hope	1994-1995	355	0.49	Bacon et al. 2009, rev. 2011
	2000-2001	219	0.31	Bacon et al. 2009, rev. 2011
Selawik	1999	1289	1.68	CSIS
	2006	934	1.11	CSIS
	2011	683	0.79	Braem et al. 2013
Shungnak	1998	561	2.17	Georgette 1999, unpubd data
	2002	403	1.62	Magdanz et al. 2004
	2008	416	1.53	Braem 2012
	2012	396	1.47	Braem et al. 2015

WP20–47 Executive Summary	
General Description	Wildlife Proposal WP20-47 requests closure of the cow moose season and to require the use of a State registration permit (RM880) to harvest moose in Unit 23. *Submitted by: Northwest Arctic Subsistence Regional Advisory Council.*
Proposed Regulation	**Unit 23—Moose** *Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 ~~moose~~* ***bull by State registration permit.*** ~~*Bulls may be harvested*~~ July 1 - Dec. 31 ~~*Cows may be harvested*~~ ~~*Nov. 1 – Dec. 31*~~ *No person may take a calf ~~or a cow accompanied by a calf~~* *Unit 23, remainder—1 ~~moose~~* ***bull by State registration permit.*** ~~*Bulls may be harvested*~~ Aug. 1 - Dec. 31 ~~*Cows may be harvested*~~ ~~*Nov. 1 – Dec. 31*~~ *No person may take a calf ~~or a cow accompanied by a calf~~*
OSM Preliminary Conclusion	**Support** Wildlife Proposal WP20-47 **with modification** to change the harvest limit from "one bull" to "one antlered bull". The modified regulation should read: **Unit 23—Moose** *Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 ~~moose~~* ***antlered bull by State registration permit.*** ~~*Bulls may be harvested*~~ *July 1 - Dec. 31*

WP20–47 Executive Summary	
	~~*Cows may be harvested*~~ ~~*Nov. 1 – Dec. 31*~~ *No person may take a calf* ~~*or a cow accompanied by a calf*~~ *Unit 23, remainder—1* ~~*moose*~~ ***antlered bull by State registration permit.*** ~~*Bulls may be harvested*~~ *Aug. 1 - Dec. 31* ~~*Cows may be harvested*~~ ~~*Nov. 1 – Dec. 31*~~ *No person may take a calf* ~~*or a cow accompanied by a calf*~~
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-47

ISSUES

Wildlife Proposal WP20-47, submitted by the Northwest Arctic Subsistence Regional Advisory Council (Council), requests closure of the cow moose season and to require the use of a State registration permit (RM880) to harvest moose in Unit 23.

DISCUSSION

The proponent is concerned about declines in the Unit 23 moose population. The Council states that they would like to eliminate the cow moose season and require the use of the State registration permit to conserve cows, improve harvest reporting, and in turn, help the Unit 23 moose population recover. The Council also mentions that this request would align State and Federal regulations, which would reduce user confusion in the area.

Existing Federal Regulation

Unit 23—Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 moose

Bulls may be harvested	*July 1 - Dec. 31*
Cows may be harvested	*Nov. 1 – Dec. 31*
No person may take a calf or a cow accompanied by a calf	

Unit 23, remainder—1 moose

Bulls may be harvested	*Aug. 1 - Dec. 31*
Cows may be harvested	*Nov. 1 – Dec. 31*
No person may take a calf or a cow accompanied by a calf	

Proposed Federal Regulations

Unit 23—Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 ~~moose~~ ***bull by State registration permit.***

~~*Bulls may be harvested*~~	*July 1 - Dec. 31*

~~*Cows may be harvested*~~	~~*Nov. 1 – Dec. 31*~~
No person may take a calf ~~*or a cow accompanied by a calf*~~	
Unit 23, remainder—1 ~~*moose*~~ ***bull by State registration permit.***	
~~*Bulls may be harvested*~~	*Aug. 1 - Dec. 31*
~~*Cows may be harvested*~~	~~*Nov. 1 – Dec. 31*~~
No person may take a calf ~~*or a cow accompanied by a calf*~~	

Existing State Regulation

Unit 23—Moose

Unit 23, north of and including Singoalik River drainage		
Residents—One antlered bull by permit available in person at license vendors within Unit 23 villages June 1-July 15	*RM880*	*July 1-Dec 31*
or		
Residents—One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side	*HT*	*Sept 1-Sept 20*
Nonresidents		*No open season*
Unit 23, remainder		
Residents—One antlered bull by permit available in person at license vendors within Unit 23 villages June 1-July 15	*RM880*	*Aug 1-Dec 31*
or		
Residents—One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side	*HT*	*Sept 1-Sept 20*
Nonresidents—One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit	*DM872/874-876/885*	*Sept 1-Sept 20*

Extent of Federal Public Lands

Federal public lands comprise approximately 71% of Unit 23 and consist of 40% National Park Service (NPS) managed lands, 22% Bureau of Land Management (BLM) managed lands, and 9% U.S. Fish and Wildlife Service (USFWS) managed lands (**Figure 1**).

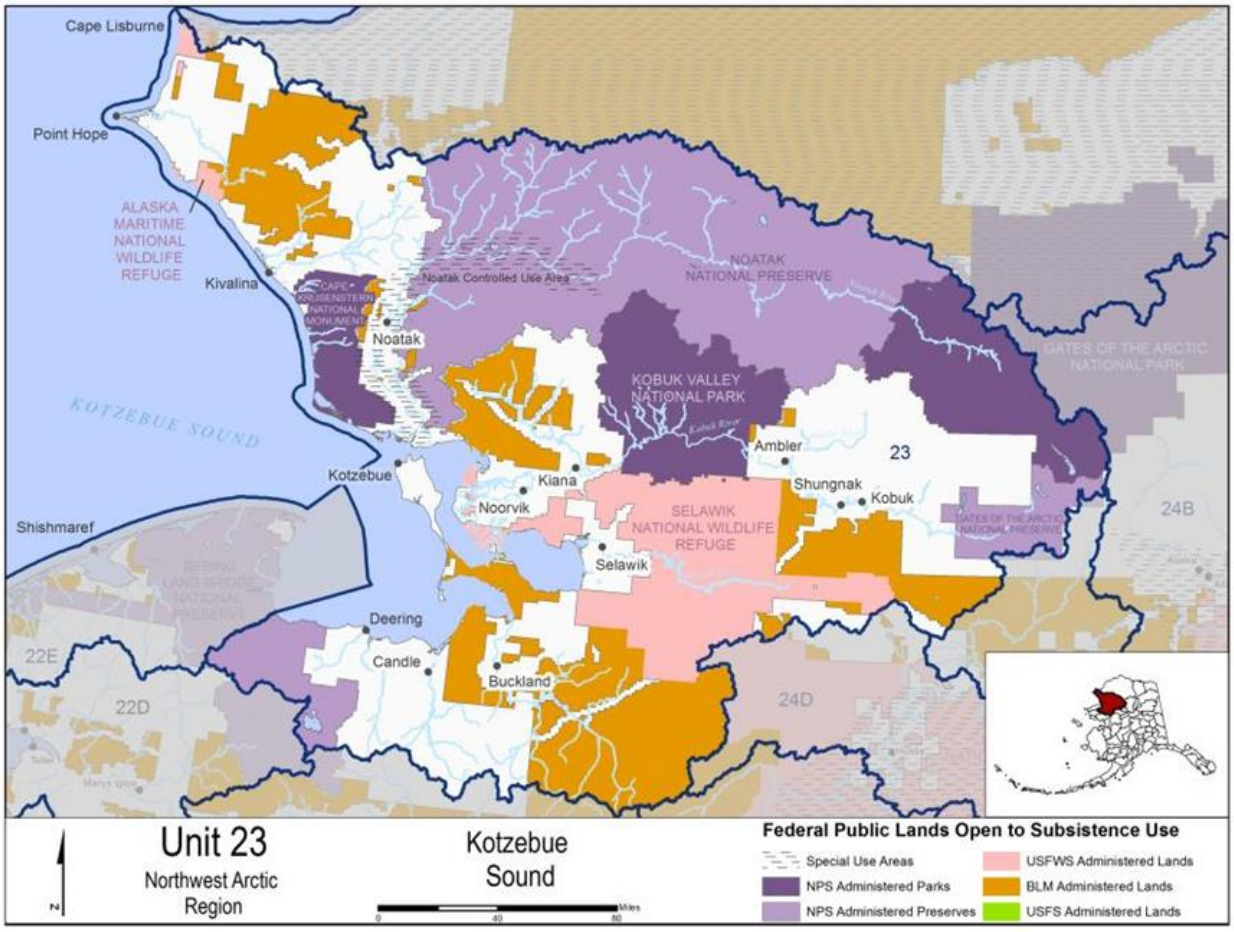

Figure 1. Federal public lands in Unit 23.

Customary and Traditional Use Determinations

Residents of Unit 23 have a customary and traditional use determination for moose in Unit 23.

Regulatory History

In 1994, the Federal moose hunt in Unit 23 consisted of three hunt areas: Unit 23 north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik rivers (Unit 23 NW), Unit 23 within the Noatak River drainage, and Unit 23 remainder. The harvest limit in each hunt area was one moose with a prohibition on the take of cows accompanied by calves. The season in the Unit 23 NW hunt area was July 1-Mar. 31; the season in the Noatak River drainage hunt area was Aug. 1-Sept. 15 and Oct. 1-Mar. 31, although antlerless moose could only be taken Nov. 1-Mar. 31; the season in Unit 23 remainder was Aug. 1-Mar. 31.

State moose regulations became more restrictive in 2003 when Alaska Board of Game (BOG) approved amended Proposal 15 (effective starting with the 2004/05 regulatory year), making it more difficult for nonlocal residents to hunt moose, creating four registration hunts in the unit with permits (RM880) only available in person at licensed vendors in Unit 23 villages from June 1-July 15. This early availability of

permits occurred before most of the seasons opened, requiring nonlocal hunters to make a special trip to a Unit 23 village in order to receive a permit. These permits also allowed for better tracking of harvest.

In 2005, Proposal WP05-18, submitted by the Council, requested prohibiting the harvest of calves, shortening the season for moose in most of Unit 23 from July 1 (or Aug. 1)-Mar. 31 to Aug. 1-Dec. 31 (five month season), combining the Noatak drainage and remainder hunt areas, and allowing antlerless moose to be harvested only in November and December. The Federal Subsistence Board (Board) tabled this proposal in response to a Council recommendation to provide time for residents of local villages to review the proposal and provide their input due to differing viewpoints related to the moose population and local subsistence needs (FSB 2005).

In 2006, Proposal WP06-54 was submitted by the Council to replace WP05-18, requesting that the harvest of moose calves be prohibited and that the two week seasonal closure (Sept. 16-30) in the Noatak River drainage hunt area be rescinded. The Board adopted WP06-54 under its consensus agenda.

In January 2017, the BOG adopted amended Proposal 36, changing the antlerless moose season in Unit 23 to one antlered bull due to conservation concerns (ADF&G 2017a). Of note, nonresident drawing permits had been reduced from 50 permits in 2016/17 to 34 permits in 2017/18 and, later in 2017, the Alaska Department of Fish and Game (ADF&G) cancelled the 2017/18 nonresident moose hunt in Unit 23, voiding all issued permits (ADF&G 2017a, 2017b, NWARAC 2017a, Saito 2017 pers. comm.).

In April 2017, the Board rejected Temporary Special Action WSA17-02, which requested that Federal public lands in Unit 23 be closed to moose harvest by non-Federally qualified users during the 2017/18 regulatory year. The Board stated that they wanted to allow time to assess the effects of recent State actions prior to considering a unit-wide closure.

During the 2018/20 regulatory cycle, the Council (WP18-41) and Louis Cusack (WP18-42) submitted similar proposals requesting changes to the Unit 23 moose season, including shortening the cow and overall moose seasons and aligning Federal and State hunt areas. Specifically, WP18-41 requested combining the Noatak River drainage and remainder hunt areas, changing the closing date of the bull season from Mar. 31 to Dec. 31, and restricting cow harvest to Nov. 1–Dec. 31. The Board adopted Proposal WP18-41 to protect the declining moose population and took no action on WP18-42.

In 2018, Emergency Special Action WSA18-04, which requested closing the cow moose season in Unit 23, was submitted to the Board. The Board approved with modification to close the Federal winter cow moose season and close moose hunting in Unit 23 except by Federally qualified subsistence users for the 2018/19 regulatory year. ADF&G also closed the non-resident moose season in Unit 23 and planned to continue the nonresident closure until moose populations rebound (NWARAC 2018a).

Controlled Use Areas

In 1988, the BOG established the Noatak Controlled Use Area (CUA) in part, “to help reduce harvests on a declining moose population” (ADF&G 1988:47, Alaska Board of Game 1995: 1). In 1990, the Noatak CUA was adopted under Federal subsistence regulations. The Noatak CUA is closed to the use of aircraft

in any manner for big game hunting, including transportation of big game hunters, their hunting gear, and/or parts of big game from Aug. 15-Sep. 30. Currently, the Noatak CUA under State regulations consists of a corridor extending five miles on either side of, and including, the Noatak River beginning at the mouth of Agashashok River, and extending upstream to the mouth of the Nimiuktuk River. Currently, the Noatak CUA under Federal regulations consists of a corridor extending five miles on either side of the Noatak River beginning at the mouth of the Noatak River and extending upstream to the mouth of Sapun Creek.

In 2011, Selawik National Wildlife Refuge designated refuge lands in the northwest portion of the refuge as closed to big game hunting by commercial guides and transporters through their comprehensive conservation plan (FWS 2011, 2014). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik. The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (FWS 2011).

Current Events

The Council also submitted a wildlife special action request (WSA19-04) to close the cow moose harvest for the 2019/20 regulatory year to ensure that the cow harvest in the unit remains closed until the Board can take action on this regulatory proposal.

The State of Alaska submitted written comments in support of WSA19-04. The State mentioned that the moose population has declined from an estimate of 7,500 moose in 2017 to a current population estimate of 5,600.

Biological Background

Moose first appeared in eastern Unit 23 during the 1920s, expanding their range from the east. Over the next several decades, moose spread northwest across Unit 23 to the Chukchi Sea coast (**Figure 2**) (LeResche et al. 1974, Tape et al. 2016, Westing 2012). The Unit 23 moose population grew through the late-1980s (Westing 2012). This rise in population was followed by severe winters and extensive flooding from 1988-1991 which, in conjunction with predation by brown bears and wolves, reduced the population and overall moose density (Westing 2012).

State management objectives for moose in Unit 23 include (Saito 2014):

- Maintain a unit-wide adult moose population of 8,100-10,000 moose
    - Noatak River and northern drainages 2,000-2,300 moose
    - Upper Kobuk River drainage 600-800 moose
    - Lower Kobuk River drainage 2,800-3,400 moose
    - Northern Seward Peninsula drainages 700-1,000 moose
    - Selawik River drainage 2,000-2,500 moose
- Maintain a minimum fall ratio of 40 bulls:100 cows, except in the Lower Kobuk where bull:cow ratios are skewed by its disproportional use by maternal cows. The higher bull:cow ratio goals are due to the low densities and wide distribution of moose throughout Unit 23 (Saito 2014).

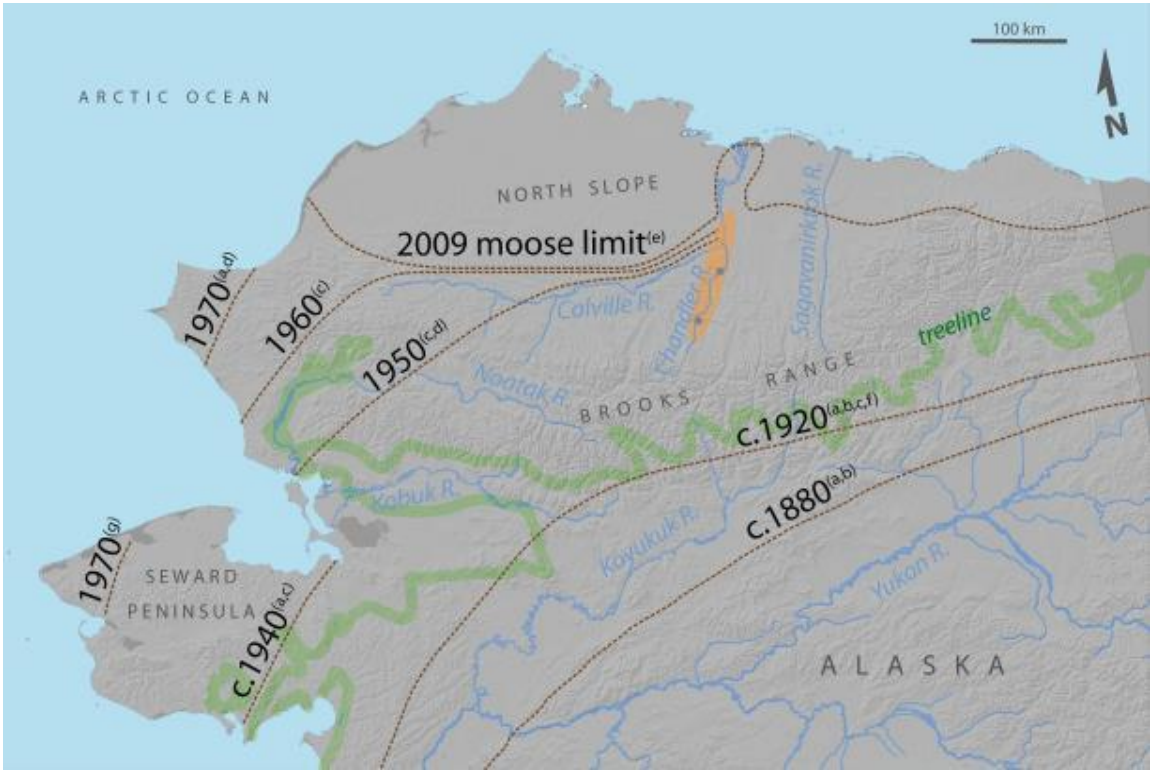

Figure 2. Temporal moose distribution changes in northern Alaska (figure from Tape et al. 2016).

ADF&G, in cooperation with Federal partners, conducts spring population and fall composition surveys for moose in Unit 23. Surveys are conducted within census areas on a rotating basis with each census area being surveyed approximately every five years (**Figure 3**) (Alaska Board of Game 2017). Census areas have fluctuated throughout the years due to time and financial constraints as well as evolving survey techniques (Saito 2017, pers. comm.). In 2012, the Squirrel River drainage was moved from the Lower Noatak census area to the Lower Kobuk census area (Saito 2014). In 2014, the Upper Kobuk census area was expanded to include previously unsurveyed areas (Saito 2017, pers. comm.). Current census areas are static for the foreseeable future.

Moose density is primarily influenced by local factors such as snow depth, fire frequency, forage availability, and predators (Gasaway et al. 1992, Stephenson et al. 2006, Boertje et al. 2009, Street et al. 2015). Therefore, moose in Unit 23 are not evenly distributed across the landscape, with some drainages experiencing higher densities of moose than others. Between 2001 and 2017, total moose densities ranged across census areas from 0.03-0.7 moose/mi² while adult moose densities ranged from 0.03-0.59 moose/mi² (**Table 1**) (Robison 2017, Saito 2014, 2016a, pers. comm.).

Since 2009, the estimated moose population in every census area has declined (**Figure 4**), and the most recent population estimates are well below population objectives in every area except the Upper Kobuk, which just meets its lower population objective (**Table 2**) (Saito 2014, 2016a, pers.comm., Robison 2017, NWARAC 2019). An estimated 70% of the Unit 23 moose population is found in the Selawik, Lower Kobuk, and Lower Noatak River census areas (NWARAC 2018a). All three of these areas have

experienced >40% population declines since 2011. (Note: Both the old (smaller) and new (larger) Upper Kobuk census areas were surveyed in 2014. The old census area data is depicted in **Figure 3** for better comparability across years while the new census area data is listed in **Table 2**).

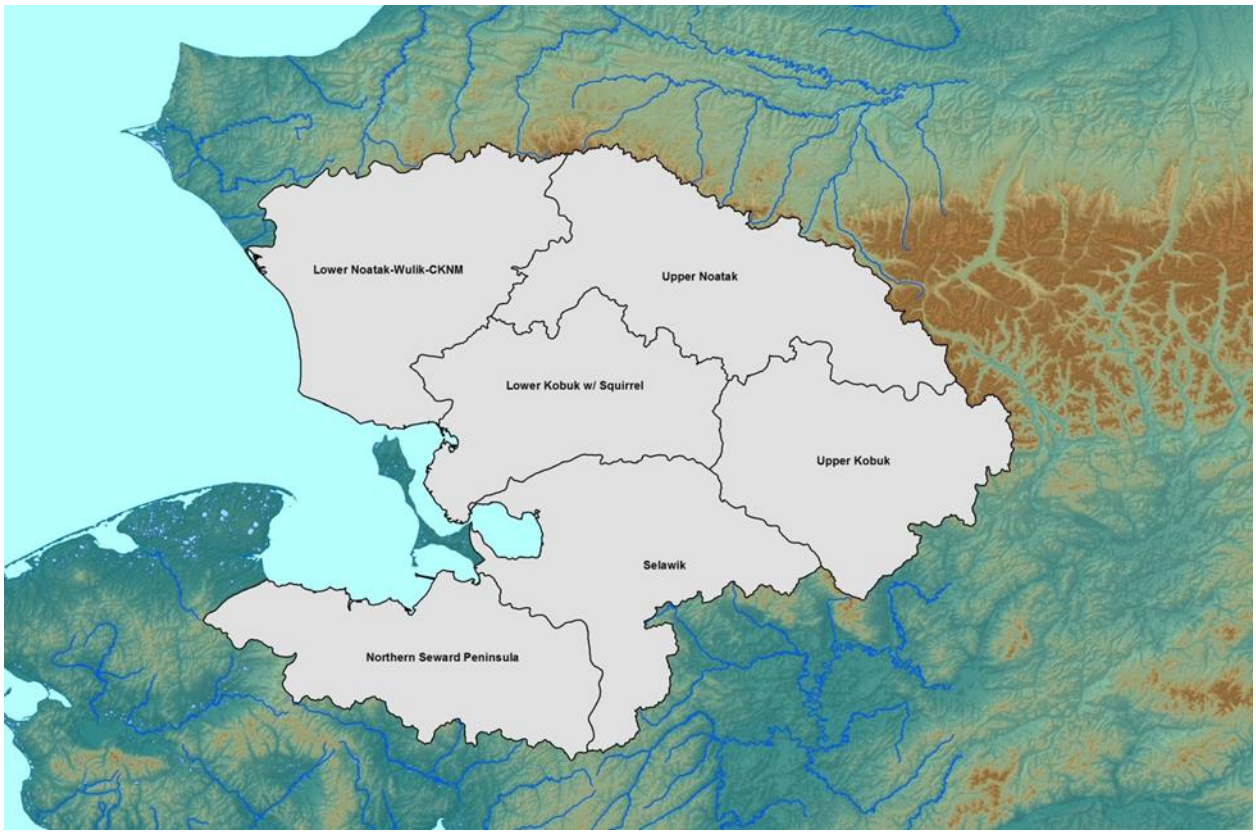

Figure 3. ADF&G moose census areas in 2017 (figure from Saito 2017, pers. comm.).

In 2016 and 2017, ADF&G provided a unit-wide population estimate of 7,500 moose (ADF&G 2017a). In 2018, ADF&G estimated the Unit 23 moose population at 6,300 moose, representing a 16% decline in the unit-wide population estimate (NWARAC 2018a). The Council and the public have also repeatedly reported at recent meetings that there are noticeably fewer moose than in the past (NWARAC 2017b, 2018a).

ADF&G conducts composition surveys in the fall to estimate bull:cow and calf:cow ratios. In 2008, ADF&G changed the methodology of fall composition surveys, and data are not comparable between survey methods (Saito 2014). From 2004-2007, Unit 23 bull:cow ratios averaged 39 bulls:100 cows. Since 2008, bull:cow ratios have ranged across survey areas from 34-54 bulls:100 cows, although composition surveys are conducted sporadically (**Table 3**) (Saito 2014, 2016a pers.comm., 2018 pers. comm.). However, in all census areas with multiple composition surveys since 2008, bull:cow ratios have declined and are below or near the State management objectives (**Table 3**).

Table 1. Moose population data collected during spring population census surveys in Unit 23 since 2001. The Upper Kobuk was surveyed in 2014 using both the older census area and the updated census area (Robison 2017; Saito 2016a pers. comm., 2018 pers. comm., NWARAC 2019).

Census Area	Year	Moose Observed	Total Moose Estimated	Census Area (mi^2)	Area Surveyed (mi^2)	Total Density ($/mi^2$)	Adult Density ($/mi^2$)	Calves :100 adults
Lower Noatak-Upper Squirrel	2001	709	1731	5230.2	832.0	0.33	0.30	10
	2005	575	1838	5349.7	915.5	0.34	0.30	13
	2008	596	2008	5349.7	1510.4	0.38	0.33	13
Lower Noatak-Wulik	2008	685	2273	6404.5	--	0.35	0.31	14
	2013	413	1478	6404.5	1310.2	0.23	0.21	11
	2018	--	866	--	--	--	--	--
Upper Noatak	2010	100	153	4485.6	1972.1	0.03	0.03	12
N. Seward Peninsula	2002	520	612	5888.5	1220.7	0.10	0.10	7
	2004	610	810	5882.9	1934.3	0.14	0.12	12
	2009	293	966	5773.2	1271.2	0.17	0.16	8
	2014	264	--	--	--	--	--	12
	2015	310	617	5767.8	1791.2	0.11	0.09	15
Upper Kobuk	2003	252	856	4001.5	895.4	0.21	0.19	12
	2006	219	737	4001.5	973.7	0.18	0.16	15
	2014	136	538	3990.8	839.2	0.13	0.13	7
	2014	186	727	5056.8	1082.5	0.14	0.13	7
	2019	--	601	--	--	--	--	23
Lower Kobuk	2006	1532	3398	4870.5	1457.6	0.70	0.59	15
	2012	789	2497	4870.5	1457.6	0.51	0.48	8
Lower Kobuk-Squirrel	2012	789	2546	5338.0	1290.8	0.48	0.44	8
	2017	796	1346	5338.0	--	0.25	--	15
Selawik	2007	678	2319	6580.1	1845.2	0.35	0.32	10
	2011	448	1739	6559	1289.1	0.27	0.24	11
	2015	532	--	--	--	--	--	14
	2016	520	940	6559	2273	0.14	0.13	14

Fall calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2010). Since 2008, calf:cow ratios have ranged across survey areas from 4-24 calves:100 cows (**Table 3**) (Saito 2014, 2016a pers. comm., 2018 pers. comm.). These low calf:cow ratios indicate the Unit 23 moose population is declining, with the possible exception being the Lower Kobuk survey area which has a larger percentage of maternal cows. During spring population surveys, ratios of calves:100 adults are also estimated as a measure of recruitment. Between 2001 and 2019, ratios ranged across survey areas from 7-23 calves:100 adults (Saito 2016a, pers. comm., 2018, pers. comm., Robison 2017, NWARAC 2019). No clear trend is detectable with ratios increasing over time in some survey areas and decreasing or fluctuating in others.

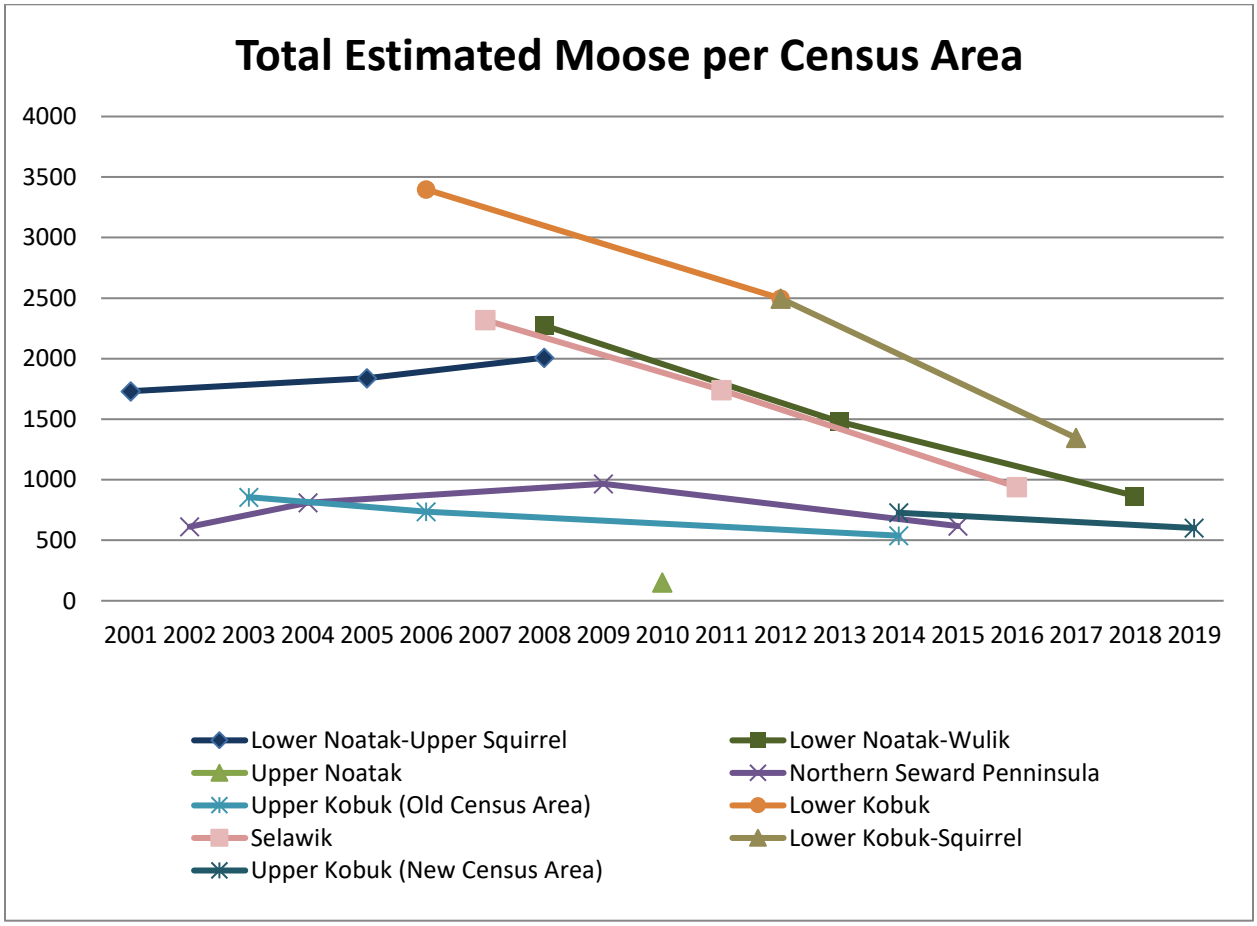

Figure 4. Total moose population estimates from 2001 to 2019 by census area. The old Upper Kobuk and new Upper Kobuk census area population estimates are both shown here (Robison 2017, Saito 2016a, pers. comm., NWARAC 2019).

While predation by brown bears, black bears, and wolves affects moose population dynamics in Unit 23, the overall level of impact of predators in relation to other factors such as weather, snow depth, disease, and human harvest is unknown, although deep snow and icing events limit moose movements, increasing their susceptibility to predation (Saito 2014, Fronstin 2018 pers. comm.). Relatively high moose densities and calf:cow ratios in the Kobuk River delta, where predator populations are lower due to its proximity to year-round human travel routes, suggest predators may be affecting moose in the more remote portions of

the unit (Saito 2014). However, preliminary results from the first 6 months of a 3-year calf survival study in the Lower Kobuk drainage indicate 60% (46 out of 77) of collared calves died from bear predation, which is comparable to other moose populations in Alaska (Hansen 2018 pers. comm., NWARAC 2018b). As humans primarily harvest bull moose and bull:cow ratios have not substantially declined across years despite substantial population declines, human harvest may not be a limiting factor (NWARAC 2017a).

Table 2. Comparisons across Unit 23 study areas of the most recent moose population estimates, population objectives, and harvestable surpluses. The harvestable surplus is calculated as 6% of the population. The Upper Kobuk census area represents the updated census area that was created in 2014. The spring 2017 and 2018 surveys in the Lower Kobuk and Lower Noatak-Wulik survey areas, respectively are incorporated in the table, but not into the extrapolated population total. Extrapolated total incorporates estimated populations in non-surveyed portions of Unit 23 (Robison 2017, Saito 2016a pers. comm., 2018 pers. comm., NWARAC 2018a, 2019).

Unit 23 Study Area	Most Recent Survey Year	Population Estimate	Population Objective	% Below Population Objective	Harvestable Surplus
Noatak River Drainages	2010 (Upper) 2018 (Lower)	1019	2,000-2,300	49	61
Lower Kobuk River Drainage	2017	1,346	2,800-3,400	52	81
Upper Kobuk River Drainage	2019	601	600-800	0	36
Selawik River Drainage	2016	940	2,000-2,500	53	56
Northern Seward Peninsula	2015	617	700-1,000	12	37
Total		**4,523**			**271**
Extrapolated 2017 Total		**7,500**			**450**
Extrapolated 2018 Total		**6,300**			**378**

Table 3. Bull:cow and calf:cow ratios in fall composition surveys conducted after 2007 (Saito 2014, 2016a pers. comm., 2018 pers. comm.).

Survey Area	Year	Bulls:100 Cows	Calves:100 Cows
Selawik	2008	54	18
	2010	47	19
	2015	43	20
Lower Kobuk	2011	45	15
	2017	38	24
Lower Noatak	2013	53	4
	2018	41	17
Northern Seward Peninsula	2009	53	4
Seward Peninsula	2014	34	16

Habitat is not thought to be a limiting factor (NWARAC 2018a). Moose rely on willow and shrub habitats for browsing and for cover from predators. Shrub and willow productivity, height, and cover have

increased and expanded in Unit 23 in response to rising average temperatures (Tape et al. 2016). Taller vegetation provides more suitable cover and increased available forage above the snowpack (Tape et al. 2016). Wildfire (the primary driver of boreal forest succession) frequency and shrub habitat is also forecasted to increase in Northern Alaska as the Arctic climate warms, resulting in more moose habitat in Unit 23 (Joly et al. 2012, Swanson 2015). During a 2005 habitat survey in Unit 23, willows did not appear to be over-browsed by moose (Westing 2012). A 2017 browse survey, completed in the Lower Kobuk, suggested that winter forage is not a limiting factor for moose populations (NWARAC 2018a). Twinning rates are another indicator of habitat and food limitations. In 2016, 41% of cows surveyed in Unit 23 had twins, further suggesting food is not a limiting factor and the population is not experiencing a density-dependent response (NWARAC 2018a).

Cultural Knowledge and Traditional Practices

Unit 23 encompasses the Northwest Arctic Borough, which was established in 1986 and is home to 7,523 residents from 11 communities (NAB 2016). Approximately 86% of the residents identify as Alaska Native or part Native, with the majority of these identifying as Iñupiat Eskimo (NAB 2016). The borough comprises approximately 39,000 mi^2 on which subsistence activities are a vital part of the lifestyle for local residents (NAB 2016).

Historically, the people of the Northwest Arctic lived in small family clusters that were spread widely across the landscape (Burch 1980: 265). It was not until the 20th century that most residents of the region became centralized in more permanent winter villages (Georgette and Loon 1993: 3). Kotzebue became the largest community in the region and is currently considered the hub of economic activity in the area. In 1985, Kotzebue was more than eight times larger than the average community in the region by population (2,633 individuals), and four times larger than the second largest community – Selawik (Georgette and Loon 1993: 3). In 2010 the population of Kotzebue was recorded as 3,201 individuals (DCCED 2016). The community is near the mouth of several major river systems. It is surrounded by the marine waters of Kotzebue Sound, and the original village was named "Qikiqtagruk" (Georgette and Loon 1993: 4).

The resources of the Northwest Arctic region are relatively rich and varied despite its high latitude (Burch 1984: 306). A variety of animal species are available and utilized for subsistence including marine mammals, terrestrial mammals, birds, and fish (Burch 1984: 306). Caribou has been a staple in the diet of many Iñupiat peoples for centuries (Georgette and Loon 1993: 78). In many parts of the Northwest Arctic, however, shifts in herd migration and size often cause variability in the availability of this resource, with the use of caribou and harvest strategies often changing accordingly over time (Georgette and Loon 1993: 78).

Despite the diversity of resources in the region, moose are a relatively recent addition, especially in lowland and coastal areas (Georgette and Loon 1993: 83). Archaeological sites in tundra and northern tree-line areas of Alaska have reported few moose remains until the mid-20th century and this is consistent with historical accounts and minor representation in Iñupiat culture (Hall 1973, Coady 1980, Tape et al. 2016). Reports of nineteenth century explorers also lacked observations of moose along the Kobuk, Noatak, or Colville Rivers, as well as along the Arctic coast (Coady 1980).

Moose were present in the tributaries of the upper and middle Noatak River in the 1940s and became more common downriver after 1960 (Georgette and Loon 1993: 83). In the upper Kobuk River, moose did not appear until the 1920s but soon thereafter populated the entirety of the drainage (Georgette and Loon 1993: 83). Uhl and Uhl (1977) reported that residents of the Cape Krusenstern area lacked historic traditions that included moose. By the 1980s, moose were present in suitable habitat throughout northwest Alaska (Georgette and Loon 1993: 84).

According to Georgette and Loon (1993), residents of Kotzebue continued to consider moose as secondary to caribou in their importance and desirability as a subsistence food; they were taken to add dietary variety. Residents hunted moose in the fall, but moose were also harvested throughout the winter as needed (Georgette and Loon 1993: 84). The relative size of moose made them more difficult to butcher and pack than caribou, and hunters often preferred to harvest the species as close as possible to the edge of a river or a lake in proximity to their boat (Georgette and Loon 1993: 84). Moose were generally prepared and preserved by similar means as caribou, most often aged and frozen (Georgette and Loon 1993: 84). The cartilaginous parts of the nose were the only part of the heads used. Because moose hides were not generally smoked or tanned, they were rarely salvaged (Georgette and Loon 1993: 84). Although much of this information was collected more than 25 year ago, much of this still holds true today.

The average per capita harvest of moose in Kotzebue in 1986 was 13 pounds, accounting for only 3% of the average household harvest (Georgette and Loon 1993: 84). Approximately 8% of Kotzebue households harvested moose (compared to 45% harvesting caribou), but 18% indicated that they hunted for moose but were unsuccessful (Georgette and Loon 1993: 84). Despite the small percentage of households harvesting moose, sharing of this resource was widespread with approximately 42% of households using it (Georgette and Loon 1993: 84). The use and harvest of moose by Kotzebue residents was similar in 2012 with approximately 13 pounds of this resource harvested per capita, 9% of households harvesting moose, and 37% of households using moose (ADF&G 2012).

The harvest and use of a resource in regional hubs may be different than that of a rural village since the former tends to be more heterogeneous in "culture, birthplace, education, employment, and length of residency" (Georgette and Loon 1993: 4). In 1992, the rural northwest arctic community of Kivalina harvested approximately 26 pounds of moose per capita, with 23% of the households harvesting the resource and 47% of households using the resource (ADF&G 1992). In 2010, residents of Kivalina harvested approximately 19 pounds of moose per capita with 13% of households harvesting the resource and 16% using the resource (ADF&G 2010).

Changes in harvest and use patterns may be attributable to many factors including the availability of moose and other resources in a given a year. Georgette and Loon (1993) suggested that future declines in caribou availability in the region could result in increased reliance on moose to meet the subsistence harvest demands of Kotzebue residents. Given recent declines in the Western Arctic Caribou Herd (Dau 2015), moose may already be becoming a more prominently sought after resource for meeting subsistence needs in the region.

Harvest History

Harvest data is derived from State harvest reports and community household surveys. Community household surveys are used, in part, as a method to determine whether harvest is being reported accurately in State harvest reports. Harvest reports provide data on an annual basis. Community household surveys gather data from local communities pertaining to subsistence harvest on an irregular basis, with many communities only being visited once over a five year time span. In Unit 23, community household surveys show that moose harvest is underreported by local users (users residing in Unit 23), but nonlocal user harvest can be assumed accurate based on the requirement of registration permits and drawing permits in some areas. This section will discuss State harvest report data prior to reviewing community household survey data.

Between 2005 and 2018, total reported moose harvest in Unit 23 ranged from 55-189 moose, averaging 137 moose (**Table 4**) (ADF&G 2016, 2018a). The lowest reported harvest was in 2018, after ADF&G cancelled the nonresident moose season and Federal public lands were closed to moose harvest except by Federally qualified subsistence users (WSA18-04). Local resident (residents of Unit 23), nonlocal resident, and nonresident reported harvest averaged 73 moose (54%), 42 moose (31%), and 21 moose (15%) per year, respectively (**Table 4**) (ADF&G 2016, 2018a). Cows comprised 7% of the annual reported harvest on average, with 1-21 cows being harvested each year, although the actual cow harvest is likely double what is reported (Alaska Board of Game 2017). The vast majority of moose are harvested in September (**Figure 5**) (WINFONET 2017). Since 2006, more moose have been harvested from the Kobuk River drainage than from other drainages within Unit 23 (**Figure 6**) (ADF&G 2017a).

Table 4. Reported moose harvest in Unit 23 for 2005-2018 from ADF&G harvest ticket and permit reports (ADF&G 2016, 2018a).

Year	Local Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Total Harvest	Male	Female	Unknown
2005	65	41	41	148	137	10	1
2006	79	49	30	159	150	7	2
2007	64	29	25	123	116	7	0
2008	62	48	40	151	143	7	1
2009	80	50	23	155	144	10	1
2010	102	63	22	189	169	17	3
2011	72	45	26	144	133	11	0
2012	75	57	24	156	146	10	0
2013	88	53	21	164	151	12	1
2014	74	40	10	124	109	14	1
2015	85	59	20	165	144	21	0
2016	63	18	11	95	90	4	1
2017	66	18	0	84	78	5	1
2018	42	13	0	55	54	1	0
Average	**73**	**42**	**21**	**137**	**126**	**10**	**1**

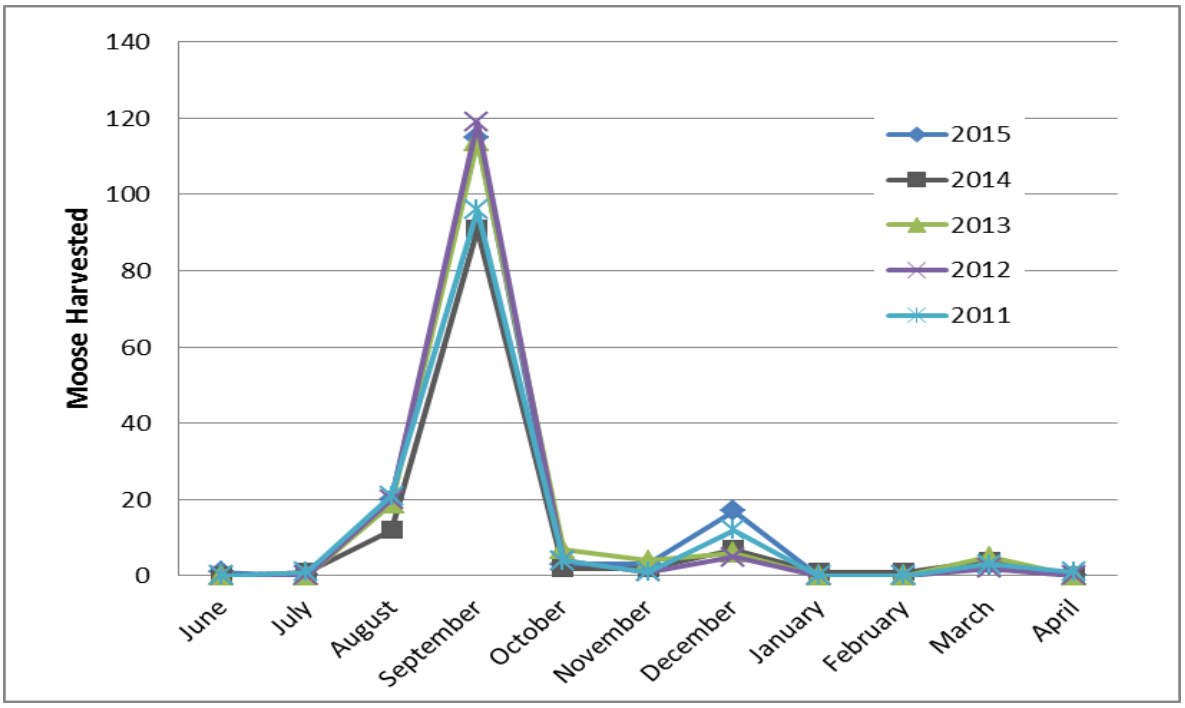

Figure 5. Moose harvest, by month, among users of Unit 23 from 2011-2015 according to State harvest reports (WINFONET 2017).

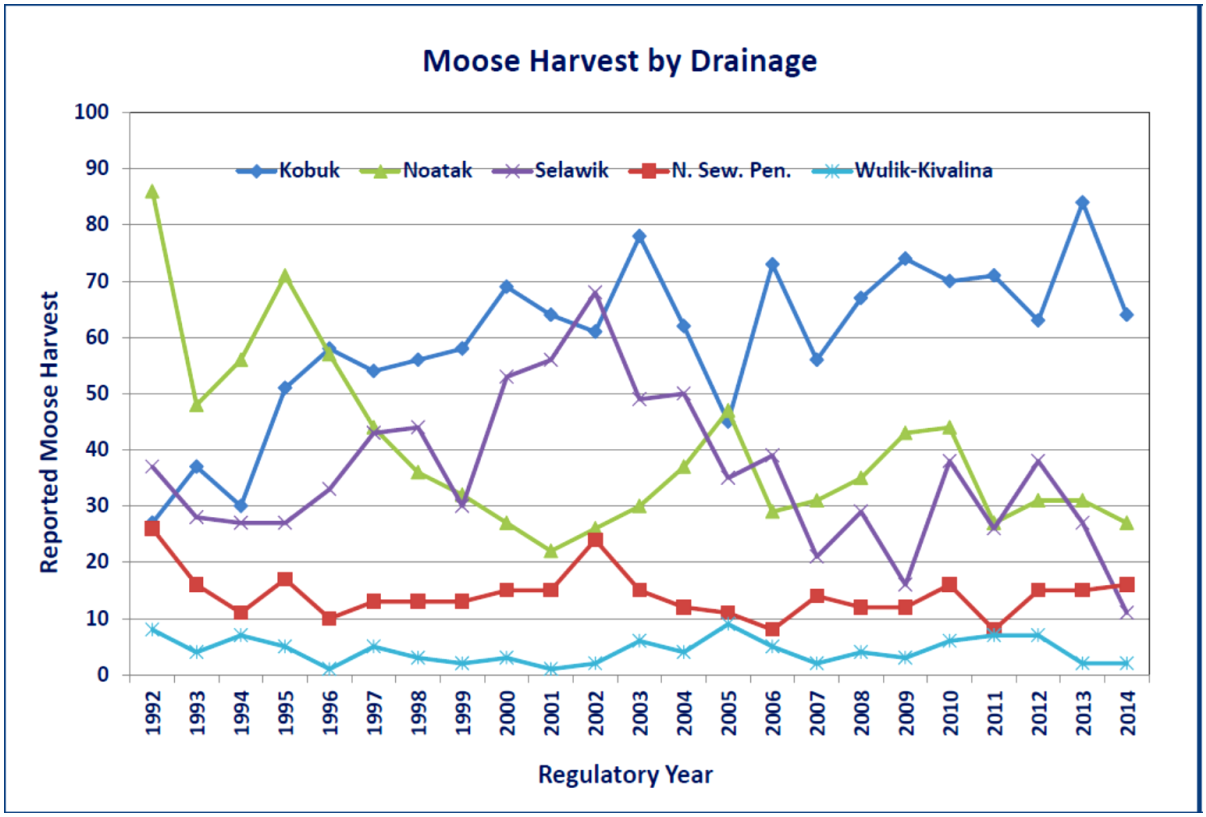

Figure 6. Moose harvest, by drainage, among users of Unit 23 from 1992-2014 according to State harvest reports (figure from ADF&G 2017a).

Since 2000, community household survey data has indicated 350-450 moose are harvested each year by local residents (Saito 2014). In regulatory year 2012/13 specifically, ADF&G estimated moose harvest by local residents as 342 moose (**Table 5**) (Saito 2014). The only community household survey data available for the number of cow moose harvested by local residents are for 2008 and 2009 in the villages of Noorvik, Shungnak, Ambler, Buckland, Kiana, and Kobuk. These data indicate 3 out of 67 total moose harvested were cows, although 6 moose were of unknown sex (ADF&G 2018b).

Table 5. Estimated moose harvest in Unit 23 villages from community harvest estimates 1991-2013 (Saito 2014).

Village	Year of Survey	Mean human population in survey years	Mean number of moose reported harvested	Per capita moose harvest	Estimated village population in 2012	Estimated annual moose harvest in 2012-2013
Ambler	2002, 2009, 2012	271	10	0.04	283	11
Buckland	2003, 2009	421	13	0.03	421	13
Deering	1994, 2007	159	8	0.05	153	8
Kiana	1999, 2006, 2009	387	13	0.03	378	13
Kivalina	1992, 2007, 2010	380	11	0.03	367	11
Kobuk	2004, 2009, 2012	135	6	0.04	164	7
Kotzebue	1991, 2013	3,362	154	0.05	3,076	154
Noatak	1994, 1999, 2001, 2007, 2010, 2011	481	7	0.02	545	11
Noorvik	2002, 2008, 2012	621	35	0.06	585	35
Point Hope	1992	685	14	0.02	674	14
Selawik	1999, 2006, 2011	797	50	0.06	856	51
Shungnak	1998, 2002, 2008, 2012	258	12	0.05	275	14
Unit 23 Total					**7,777**	**342**

ADF&G calculates the harvestable surplus of moose in Unit 23 as 6% of the population (Saito 2016a, pers. comm.). As the 2018 unit-wide population estimate is 6,300 moose, 378 moose is the estimated harvestable surplus. Reported harvest by nonlocal residents and nonresidents (~67 moose/year) combined with community household survey harvest estimates for local residents (350-450 moose/year) indicate that total Unit 23 moose harvests likely exceed the harvestable surplus. While the State has closed the nonresident season, and nonlocal resident reported harvest declined in 2016 and 2017 (**Table 4**), harvest estimates by local residents alone may still exceed the harvestable surplus (Saito 2014).

Harvest within individual drainages may be particularly high or have disproportionate effects on the population. For example, ADF&G estimates that approximately 70 moose are taken from Selawik drainage each year, which translates to a 7% harvest rate (**Table 2**) (NWARAC 2016). During winter months, large congregations of moose have been observed near villages, which can make these moose highly susceptible to harvest (Alaska Board of Game 2017). The Lower Kobuk River drainage hosts a

disproportionate number of maternal cows, possibly because this area appears to support fewer large predators due to its proximity to human travel corridors (Saito 2014). More moose are also harvested from the Kobuk River drainage than any other drainage (**Figure 6**). This suggests cow moose in the Kobuk River drainage are particularly susceptible to harvest, although the taking of cows with calves is prohibited under both State and Federal regulations. While recent restrictions to State regulations have decreased reported moose harvest, decline of the Western Arctic Caribou Herd has likely increased moose harvest by local residents trying to meet their subsistence needs (Saito 2014, NWARAC 2017b, 2018a). During recent Council meetings, subsistence users have commented on the importance of moose as a subsistence resource, particularly when caribou are scarce (OSM 2017, NWARAC 2017b, 2018a).

Other Alternatives Considered

One alternative considered is that in addition to closing the cow moose season to Federally qualified users, closure of Federal public lands in Unit 23 to moose hunting by non-Federally qualified users may be warranted for the continuation of subsistence uses. The estimated 2018 harvestable surplus is 378 moose. As harvest estimates for Federally qualified subsistence users (local residents) are 350-450 moose per year, the harvestable surplus may be met or exceeded by local resident harvest alone. Additionally, bull:cow ratios have declined in all census areas (**Table 3**).

Due to recent declines in the Western Arctic Caribou Herd population, local subsistence users are depending more on moose to meet their subsistence needs (NWARAC 2017b, 2018a). Therefore, moose harvest by Federally qualified subsistence users has likely increased in recent years. Local residents have emphasized that non-Federally qualified and Federally qualified subsistence users should share the burden of restricted moose harvest; this burden should not be put upon Federally qualified subsistence users alone who depend on moose to increase their food security (NPS 2016, OSM 2017, NWARAC 2017b, 2018a).

While the State closed the non-resident moose hunt in Unit 23, nonlocal residents still harvest approximately 44 moose from Unit 23 each year. While nonlocal resident harvest comprises only 12% of the harvestable surplus, ANILCA mandates a rural subsistence priority and indicates restrictions to non-Federally qualified users are necessary if resources are limited.

Due to comments shared by the Council at their April 2019 meeting and due to this alternative being outside the scope of the request, this alternative was not considered further. At this meeting, the Council shared their apprehension about closing Federal public lands due to the possibility of concentrating non-local hunters on State lands near the villages (NWARAC 2019).

Another alternative considered would be to not require a State registration permit under Federal regulations and to instead require a Federal registration permit. Current regulations for State registration permit RM880 state that these registration permits must be obtained by the user in person at license vendors within Unit 23 villages from June 1 through July 15. If a user is not able to make it to a village, or to a license vendor in their village, to pick up a permit during that time-frame, then they would not be permitted to harvest a moose for that year or they would need to participate in the short, antlered restricted, harvest ticket season under State regulations. It may be warranted to make the registration permit available for Federally qualified subsistence users to obtain year-round, so that local users can comply with regulations while not

interfering with their seasonal subsistence practices. One way to accomplish this could be to require a Federal registration permit, rather than the current State registration permit. This alternative was not considered further due to Federal offices not having a system in place to distribute permits in all the villages.

Effects of the Proposal

If this proposal is adopted, the Federal cow moose season in Unit 23 will be closed and moose harvest in the unit would require the use of the current State registration permit, which must be obtained between June 1 and July 15 in local villages (although users could still hunt under State regulations from Sept. 1–20 with a harvest ticket). This would decrease opportunity for Federally qualified subsistence users, as fewer moose would be available for harvest and would add the additional burden of traveling to a license vendor to obtain a registration permit every summer. If a Federally qualified subsistence user did not obtain a registration permit in person in one of the Unit 23 villages, then they would not be legally permitted to harvest a moose under Federal regulations for that year. The use of registration permits would, however, allow for better documentation of harvest in the area and would be beneficial to future moose population management in Unit 23. It may be important to note that education/outreach efforts would need to be put in place to ensure that locals are made aware of new permit requirements, if this proposal is adopted. Adoption of WP20-47 would also align State and Federal moose seasons in Unit 23, which could decrease user confusion and regulatory complexity, and would maintain the harvest limit of "one bull" rather than "one antlered bull" (which is the current State harvest limit), which would retain Federal priority for local users.

Adoption of WP20-47 could also aid in the recovery of the Unit 23 moose population. There are substantial conservation concerns that threaten the viability of the population. Surveys indicate substantial declines in almost every survey area (**Figure 3**), population estimates are below State objectives, and calf:cow ratios are below 20:100, which indicates a declining population. The Selawik, Lower Noatak, and Lower Kobuk census areas, where most of the moose in Unit 23 reside, have experienced > 40% population declines since 2011. Moose densities vary by drainage, and winter populations can be highly concentrated near villages, making them more susceptible to harvest. While most of the land immediately surrounding villages are Native lands that are already closed to cow moose harvest under State regulations, Federal lands are within 10-15 miles of every village in Unit 23.

Additionally, the harvestable surplus has likely been exceeded. While harvest data show relatively few cows are harvested, conserving cows is particularly important in maintaining a healthy moose population as cow moose are the engine of population growth (NWARAC 2017a). Typically, cow moose harvest is only permitted in populations showing signs of nutritional stress and/or to limit a growing population (ADF&G 2008). Cow harvest is not advised in areas with low or declining moose populations (ADF&G 2008) such as Unit 23. Closing the cow season would help the population recover more quickly and curtail further declines, especially in drainages where moose congregate during winter months. As the cow moose season is closed under State regulations, adopting this proposal would result in no legal harvest of cow moose in Unit 23.

OSM PRELIMINARY CONCLUSION

Support Wildlife Proposal WP20-47 **with modification** to change the harvest limit from "one bull" to "one antlered bull".

The modified regulation should read:

Unit 23—Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 ~~moose~~ ***antlered bull by State registration permit.***

~~Bulls may be harvested~~	*July 1 - Dec. 31*
~~Cows may be harvested~~	*~~Nov. 1 – Dec. 31~~*

No person may take a calf ~~or a cow accompanied by a calf~~

Unit 23, remainder—1 ~~moose~~ ***antlered bull by State registration permit.***

~~Bulls may be harvested~~	*Aug. 1 - Dec. 31*
~~Cows may be harvested~~	*~~Nov. 1 – Dec. 31~~*

No person may take a calf ~~or a cow accompanied by a calf~~

Justification

There are serious population viability concerns for the Unit 23 moose population due to substantial declines in population estimates, low calf:cow ratios, and likely exceedance of the harvestable surplus. Actual cow moose harvest is likely double what is reported, according to household surveys. Since cow moose are the keystone to population growth, conserving cows is essential to maintaining a healthy moose population. Cow moose harvest is not recommended in a low density, declining population. Closing the cow season and requiring a State registration permit to help managers more accurately track harvest should help the Unit 23 moose population recover more quickly and prevent further declines. Likewise, modifying the harvest limit to "one antlered bull" could further limit cow harvest, as well as cow harassment by hunters, by ensuring that a cow is not inadvertently harvested when the user believes they are targeting an antlerless bull in December, after antlers have dropped.. While adoption of this proposal reduces opportunity for Federally qualified subsistence users to harvest cow moose, they will still be able to harvest antlered bulls during the winter season under either Federal and State regulations.

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WP20–16/17 Executive Summary	
General Description	Wildlife Proposal WP20-16 requests extending the sealing period for wolf trapping and removing language referencing a combined Federal-State harvest quota for wolves in Unit 2. *Submitted by: Southeast Alaska Subsistence Regional Advisory Council.* Wildlife Proposal WP20-17 requests extending the sealing period for wolf hunting, changing the hunting harvest limit to "no limit," and removing language referencing a combined Federal-State harvest quota for wolves in Unit 2. *Submitted by: Southeast Alaska Subsistence Regional Advisory Council.*
Proposed Regulation	WP20-16 **Unit 2 –Wolf Trapping** *No limit.* — *Nov. 15-Mar. 31.* *~~Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached~~.* *Any wolf taken in Unit 2 must be sealed within ~~14 days of harvest~~* ***30 days of the end of the season.*** WP20-17 **Unit 2 –Wolf Hunting** *~~5 wolves~~* ***No limit****.* — *Sep. 1-Mar. 31.* *~~Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached~~.* *Any wolf taken in Unit 2 must be sealed within ~~14 days of harvest~~* ***30 days of the end of the season.***
OSM Preliminary Conclusion	**Support** Proposal WP20-16 and Proposal WP20-17.

WP20–16/17 Executive Summary	
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**1 oppose**

DRAFT STAFF ANALYSIS
WP20-16/17

ISSUES

Wildlife Proposal WP20-16, submitted by the Southeast Alaska Subsistence Regional Advisory Council (Council), requests extending the sealing period for wolf trapping and removing language referencing a combined Federal-State harvest quota for wolves in Unit 2.

Wildlife Proposal WP20-17, also submitted by the Council, requests extending the sealing period for wolf hunting, changing the hunting harvest limit to "no limit," and removing language referencing a combined Federal-State harvest quota for wolves in Unit 2.

DISCUSSION

The Alaska Board of Game (BOG) recently adopted a new harvest management strategy for wolves in Unit 2, resulting in misalignment of State and Federal regulations. The proponent states that their intent is to align State and Federal regulations, to implement the new harvest management strategy under Federal regulations, and to increase harvest opportunity. The proponent also states no conservation concerns or any effects on other uses are expected from adoption of these proposals.

Note: Wolves in Southeast Alaska are classified as a subspecies called the Alexander Archipelago wolf (*Canis lupus ligoni*) and will be referred to as Alexander Archipelago wolf/wolves throughout this analysis.

Existing Federal Regulation

Unit 2 –Wolf Hunting

5 wolves.	*Sep. 1-Mar. 31.*

Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached. Any wolf taken in Unit 2 must be sealed within 14 days of harvest

Unit 2 –Wolf Trapping

No limit.	*Nov. 15-Mar. 31.*

Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached. Any wolf taken in Unit 2 must be sealed within 14 days of harvest

Proposed Federal Regulation

WP20-16

Unit 2 –Wolf Trapping

No limit. *Nov. 15-Mar. 31.*

~~Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached~~. Any wolf taken in Unit 2 must be sealed within ~~14 days of harvest~~ ***30 days of the end of the season.***

WP20-17

Unit 2 –Wolf Hunting

~~5 wolves~~ ***No limit****.* *Sep. 1-Mar. 31.*

~~Federal hunting and trapping season may be closed when the combined Federal-State harvest quota is reached~~. Any wolf taken in Unit 2 must be sealed within ~~14 days of harvest~~ ***30 days of the end of the season.***

Existing State Regulation

Unit 2−Wolf Hunting

Residents and Non-residents—5 wolves *Dec. 1-Mar. 31*

Hides must be sealed within 30 days of kill.

Unit 2−Wolf Trapping

Residents and Non-residents—No limit. *Nov. 15-Mar. 31*

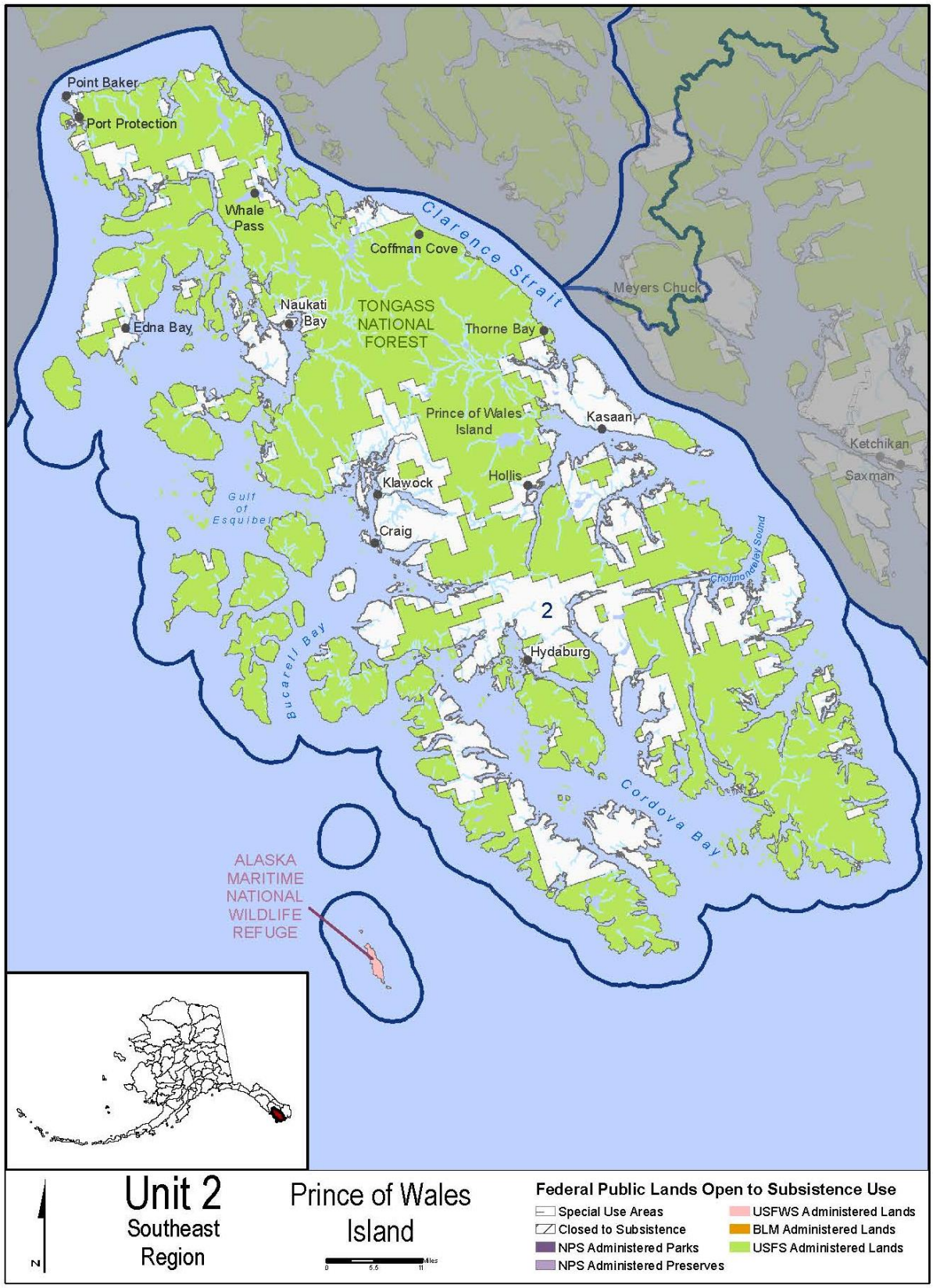
Hides must be sealed within 30 days after the close of the season.

Extent of Federal Public Lands

Unit 2 is comprised of 71.7% Federal public lands and consists of 71.6% USDA Forest Service (USFS) managed lands and 0.1% U.S. Fish and Wildlife Service (USFWS) managed lands (**Map 1**).

Customary and Traditional Use Determinations

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for wolves in Unit 2. Therefore, all Federally qualified subsistence users may harvest wolves in Unit 2.


Point Baker
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Whale Pass
Coffman Cove
Clarence Strait
Meyers Chuck
Naukati Bay
TONGASS NATIONAL FOREST
Edna Bay
Thorne Bay
Prince of Wales Island
Kasaan
Ketchikan
Saxman
Klawock
Hollis
Gulf of Esquibel
Craig
Chomondeley Sound
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Bucarell Bay
Cordova Bay
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Unit 2
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Federal Public Lands Open to Subsistence Use
Special Use Areas
Closed to Subsistence
NPS Administered Parks
NPS Administered Preserves
USFWS Administered Lands
BLM Administered Lands
USFS Administered Lands

Map 1. Unit 2

Regulatory History

From 1915 through the early 1970s, the government paid a cash bounty for wolves in Southeast Alaska and during the 1950s, the Federal government poisoned wolves in the region to increase deer numbers (Porter 2018). Following the discontinuance of the wolf bounty program, wolf hunting and trapping regulations in Unit 2 remained the same until 1992 (Larsen 1994).

In 1990, Federal hunting and trapping regulations were adopted from State regulations. State and Federal trapping seasons were Nov. 10-Apr. 30 with no harvest limits, and State and Federal hunting seasons were year-round with no harvest limits.

Also in 1990, an interagency committee sponsored by the USFS had expressed concern about the viability of wolves in Southeast Alaska due to extensive timber harvesting on the Tongass National Forest (Porter 2018).

In 1992, the BOG restricted the State hunting season to Aug. 1-Apr. 30 and decreased the harvest limit to 5 wolves. The State hunting season has not changed since, and the State trapping season remained the same until 2019.

In 1993, the Biodiversity Legal Foundation and an independent biologist from Haines, Alaska petitioned the U.S. Fish and Wildlife Service (USFWS) to list the Alexander Archipelago wolf as a threatened subspecies pursuant to the Endangered Species Act (ESA) (Porter 2018).

In 1994, the Board adopted Proposal P94-02 to align the Federal wolf hunting season and harvest limit with the State hunting season (Aug. 1-Apr. 30 with a 5 wolf harvest limit).

In 1995 and 1997, the USFWS responded to the 1993 petition, finding the listing not to be warranted because the Alexander Archipelago wolf population appeared to be stable and because of a 1997 Tongass National Forest Management Plan, which identified a system of old-growth forest reserves geared toward conserving deer (primary prey of wolves) and, by extension, wolves (USFWS 1995, 2016, Porter 2003).

In 1997, the BOG implemented an annual Harvest Guideline Level (HGL) of 25% of the estimated Unit 2 fall wolf population (**Table 1**). The BOG established this maximum harvest level in response to a record and possibly unsustainable wolf harvest of 132 wolves in 1996 (Porter 2018). As the estimated wolf population was 350, the harvest quota was 90 wolves (see Biological Background section for sustainable harvest rates). The BOG also shortened the State hunting and trapping seasons to Dec. 1-Mar. 31 and required sealing within 30 days of harvest (Person and Logan 2012, Porter 2003).

Also in 1997, the Board adopted Proposal P97-08 to align Federal wolf hunting and trapping seasons and sealing requirements with the new State regulations. The Board also required that wolves must have the radius and ulna of the left foreleg naturally attached to the hide until sealing. Foreleg bone measurements are used as a proxy for wolf ages (pup, yearling, adult), providing population age structure and recruitment information.

In 1999, the Alaska Department of Fish and Game (ADF&G) closed the wolf season a month early (on February 29, 1999) because the HGL was predicted to be reached before the normal closing date (Person and Logan 2012, Bethune 2012, Porter 2003). Several new trappers worked Unit 2 in 1999 with good success, whereas historically only 3-4 trappers took more than 10 wolves each (Porter 2003).

In 2000, the BOG increased the HGL to 30% based on analyses indicating Unit 2 wolves experience low natural mortality (Porter 2018). The assumed wolf population was adjusted to 300 wolves, so the quota remained 90 wolves (Porter 2018).

In 2001, the Board adopted Proposal WP01-05 to shift both the hunting and trapping seasons from Dec. 1- Mar. 31 to Nov. 15- Mar. 15. The intent was to provide better access when less snow is on the ground and to coincide seasons with when wolf pelts are the most prime.

In 2003, the Board adopted Proposal WP03-10 with modification to extend the wolf hunting season from Nov. 15-Mar. 15 to Sept. 1-Mar. 31 to provide additional subsistence harvest opportunity, particularly during the fall deer hunting season and because wolf pelts prime early in Unit 2 (OSM 2003). The Board also delegated authority to the Craig and Thorne Bay District Rangers to close the Federal hunting and trapping season in consultation with ADF&G and the Chair of the Council when the combined Federal-State harvest quota is reached.

In 2007, the Board adopted Proposal WP07-15 with modification to change the closing date of the trapping season from March 15 to March 31 to provide more subsistence opportunity and to align the closing dates of State and Federal hunting and trapping seasons. The modification eliminated the requirement that wolves must have the radius and ulna of the left foreleg naturally attached to the hide until sealing.

In 2010, the BOG and the Board reduced the harvest quota to 60 wolves in response to a perceived decline in the wolf population (Porter 2018).

In 2011, the BOG changed the sealing requirement from 30 days to 14 days after harvest to help managers make quicker in-season management decisions (Bethune 2012).

Also in 2011, the Center for Biological Diversity and Greenpeace filed a second petition to list the Alexander Archipelago wolf as a threatened or endangered species under the ESA, including a request to consider Unit 2 wolves as a distinct population segment (DPS) (Porter 2018, Toppenberg et al. 2015).

In 2012, the Board adopted Proposal WP12-19 to change Federal sealing requirements to 14 days after harvest, aligning with State regulations. The Board shortened the sealing requirement to allow more efficient tracking of harvest to avoid exceeding harvest quotas.

From 2013-2018, ADF&G closed the Unit 2 wolf season early by emergency order because harvest quotas were expected to be met (**Table 1**). In 2014, ADF&G further reduced the harvest quota to 25 wolves based on recent population estimates (Porter 2018).

In 2015, the BOG revised the HGL to 20% in response to decreased population estimates and high estimates of unreported mortality (Porter 2018). As an additional conservation measure to account for unreported harvests and to address concerns about a declining population and potential listing under the ESA, State and Federal managers reduced the harvest quota by 50% (10% HGL) in 2015 and 2016 (**Table 1**) (SERAC 2017).

Also in 2015, the Board rejected Special Action Request WSA15-13 to close the Federal wolf hunting and trapping seasons for the 2015/16 regulatory year to all users. The Board determined the closure was

not warranted for either conservation concerns or continuation of subsistence uses, but noted that ADF&G and the USFS had established a very conservative harvest quota for the year.

In January 2016, the USFWS issued another "not warranted" finding in response to the 2011 ESA petition as the Alexander Archipelago wolf appeared stable and viable across most of its range (USFWS 2016, Porter 2018). Additionally, the USFWS determined that Unit 2 wolves did not meet the criteria for a DPS designation (persisting in a unique ecological setting, marked genetic differences, comprising a significant portion of the range) (USFWS 2016, Porter 2018).

In 2018, the Board rejected WP18-04 to increase the HGL to 30% under Federal regulations. The Council had submitted the proposal because it believed previous quotas were too conservative and did not accurately reflect the Unit 2 wolf population. The Board rejected the proposal due to conservation concerns over unsustainable harvests as well as concerns about the difficulty of State and Federal managers implementing separate quotas, which would also create confusion among users (FSB 2018). However, the Board expressed desire for the USFS and ADF&G to work together to find a sustainable solution to the Unit 2 wolf issue (FSB 2018).

In October 2018, the Board issued a new delegation of authority letter to the in-season managers of Unit 2 wolves. The new letter stated that the in-season managers could close, reopen, or adjust the Federal hunting and trapping season for wolves in Unit 2. Coordination with ADF&G, OSM, and the Council Chair is required.

In 2018, the BOG received three proposals for Unit 2 wolves for the 2018/19 regulatory cycle (effective July 1, 2019). The Council submitted Proposal 42 to increase the HGL to 30%. ADF&G submitted Proposal 43 to change the harvest management strategy from using HGLs to meeting specified population objectives. Proposal 43 also proposed changing the sealing requirement for the State trapping season to 30 days after the close of the season as the new management strategy would not depend on in-season harvest management (ADF&G 2019d). The Craig Fish and Game Advisory Council (Craig AC) submitted Proposal 44 to change the opening date of the wolf trapping season from Dec. 1 to Nov. 15, which would align with the Federal trapping season opening date. The Council and ADF&G had identified the need for population objectives for Unit 2 wolves to clarify and direct management and that population objectives should be set through a transparent, public process (Porter 2018, SERAC 2017). The Council withdrew Proposal 42 in support of Proposal 43.

In January 2019, the BOG adopted Proposal 43 as amended, which had overwhelming support from five ACs and the public (SERAC 2019, ADF&G 2019d). The BOG established the population objective range for Unit 2 wolves as 150-200 wolves (see Biological Background section) (ADF&G 2019a). The BOG also adopted Proposal 44, extending the State trapping season to align with the Federal season.

Table 1. Management data for Unit 2 wolves using the Harvest Guideline Level (HGL) management strategy (Schumacher 2019, pers. comm.).

Regulatory Year	Population Estimate*	Harvest Guideline level (HGL %)	Harvest Quota	Reported Harvest	Date closed by State Emergency Order (EO)
1996				132	
1997	360	25	90	78	
1998	360	25	90	91	
1999	360	25	90	96	Feb. 29
2000	300	30	90	73	
2001	300	30	90	62	
2002	300	30	90	64	
2003	300	30	90	33	
2004	300	30	90	77	
2005	300	30	90	60	
2006	300	30	90	38	
2007	300	30	90	36	
2008	300	30	90	24	
2009	300	30	90	22	
2010	200	30	60	28	
2011	200	30	60	28	
2012	200	30	60	52	
2013	200	30	60	57	Mar. 19
2014	221	30	25	29	Feb. 22
2015	89	20	9	7	Dec. 20
2016	108	20	11	29	Dec. 21
2017	231	20	46	61	Dec. 16
2018	225	20	45	44	Dec. 18/21**

* Population estimates from 1997-2013 were assumed estimates based on harvest levels and a 1994 population estimate. Population estimates from 2014-2018 are from DNA-based spatially explicit capture-recapture studies (see Biological Background section).
** Season closed by EO on Dec. 18, but reopened to Dec. 21 because bad weather prevented trappers from recovering gear.

Current Events

The Council submitted Wildlife Special Action Request WSA19-02 to extend the sealing period for wolf hunting and trapping and to remove language referencing a combined Federal-State harvest quota for wolves in Unit 2 for the 2019/20 regulatory year. The proposed changes mirror the requests of Proposals WP20-16/17 with the exception of changing the hunting harvest limit to "no limit." In August 2019, the Board approved WSA19-02, stating that the new management strategy should help ensure a sustainable population and encourage better harvest reporting. The Board also stated that announcing predetermined season lengths provides predictability to users and renders the in-season sealing requirement unnecessary.

Biological Background

Unit 2 wolves are part of the Alexander Archipelago wolf subspecies, which ranges from coastal British Colombia north to Yakutat, Alaska and includes the islands in Southeast Alaska, excluding Unit 4 (USFWS 2015). Alexander Archipelago wolves tend to be smaller with shorter hair than continental wolves and can be genetically differentiated (USFWS 2015, Porter 2018). Using the best available data and modeling, USFWS (2015, 2016) estimated that the 2013 and 2014 Unit 2 wolf population comprised 13% (130-378 wolves) and 6% (50-159 wolves) of the total Alexander Archipelago wolf population (865-2,687 wolves), respectively. Because of the relatively high density of prey available, the islands of Unit 2 have long been assumed to support the highest densities of wolves in the state (Porter 2018). Indeed, USFWS (2015) notes that even the low, 2014 wolf density estimates for Unit 2 (9.9 wolves/1,000 km^2) are not particularly low by most standards for Northern wolf populations (Fuller et al. 2003).

State management objectives for Unit 2 wolves include (Note: State objectives were updated in 2019 after the BOG adopted Proposal 43, and are not currently published in any ADF&G management reports) (Schumacher 2019, pers. comm.):

- Manage harvest to meet a population objective of 150-200 wolves.

From 1997 (when the HGL management strategy was implemented) through 2013, Unit 2 wolf abundance was uncertain, and managers based decisions (e.g. harvest quotas) on assumed population levels, sealing records, and a 1994 population estimate (SERAC 2019, ADF&G 2019b, Porter 2003). Person and Ingle (1995) used a simulation model using radio-collared wolf data collected for a graduate research project to estimate 321 wolves and 199 wolves inhabited Unit 2 in fall 1994 and spring 1995, respectively (Porter 2003). The smaller spring estimate reflects overwinter mortality, primarily from trapping (Porter 2003). Between 1998 and 2002, Porter (2003) assumed the Unit 2 wolf population had remained relatively abundant because of consistently high harvests, which provide a population index.

Since 2013, ADF&G in cooperation with the USFS, the Hydaburg Cooperative Association, and The Nature Conservancy have employed a DNA-based spatially explicit capture-recapture (SECR) method to estimate Unit 2 wolf abundance (SERAC 2019, ADF&G 2019b). This method has been found to be the most robust and least biased method of estimating wolf populations in forested habitats (Roffler et al. 2016). The study uses hair boards equipped with scent lure to attract wolves and with barbed wire to obtain hair samples that can be sent to a lab for DNA analysis. Samples are collected from mid-October through December and lab results are usually received in late July (SERAC 2019, ADF&G 2015). Thus, harvest management decisions are made with last year's wolf population estimate. While these surveys and population estimates are currently conducted annually, they are expensive and labor intensive. Therefore, ADF&G will likely transition to conducting population estimates every 2-3 years in the future (ADF&G 2019d).

Between 2013 and 2018, Unit 2 wolf population estimates have ranged from 89-231 wolves (**Table 1, Figure 1**) (Schumacher 2019, pers. comm.). While the point estimates for the first two years differ drastically, statistically, no difference exists between the two estimates due to overlapping confidence intervals. As the study progressed, more hair boards were deployed, more wolves were recaptured in

subsequent years, and staff became more skilled at handling samples, resulting in tighter 95% confidence intervals. The wolf population estimate increased significantly between 2016 and 2017. In addition to SECR population estimates, local hunters and trappers have expressed seeing many more wolves in recent years (SERAC 2017, 2018).

Carroll et al. (2014) considered wolf populations <150-200 individuals as small, and USFWS (2015) notes that most minimum viable population estimates for gray wolves range between 100 and 150 wolves. However, despite the comparatively small size and insularity of the Unit 2 wolf population, inbreeding probably is not affecting it (Breed 2007, USFWS 2015).

Natural causes account for only 4% of the annual mortality of the Unit 2 wolf population, while human-caused mortality accounts for the remainder (Person and Russell 2008, Wolf Technical Committee 2017). Person and Russell (2008) studied 55 radio-collared wolves in Unit 2 from 1993-2004, and 39 wolves (71%) were killed by humans, while only 5 (9%) died from natural causes. Similarly, ADF&G collared an additional 12 wolves from 2012-2015, and 8 (67%) were killed by humans, while only 1 (8%) died from natural causes (USFWS 2015). However, these studies took place in roaded portions of Unit 2 where harvest is higher, so human-caused mortality rates may be somewhat inflated (USFWS 2015).

Wolves are remarkably resilient to high levels of harvest and human activities due to their high potential annual productivity and long dispersal abilities (USFWS 2015, Weaver et al. 1996). If sufficient prey is available, wolves can rapidly repopulate areas depleted by hunting and trapping (USFWS 2015, Ballard et al. 1987). However, due to differences in wolf population characteristics (e.g. sex/age structure), a universal, sustainable human-caused mortality rate does not exist, and the Unit 2 wolf population may be particularly vulnerable to overexploitation due to its insularity and lack of immigration (USFWS 2015, Wolf Technical Committee 2017). Person and Russell (2008) reported that a >38% total annual mortality rate for Unit 2 wolves was likely unsustainable based on past harvest rates and population estimates. The Regional Wildlife Supervisor for Southeast Alaska, ADF&G stated that other wolf research and the scientific literature indicate that a healthy wolf population can sustain 30% annual mortality (SERAC 2017). Additionally, wolf harvest records indicate neither offering a cash bounty nor poisoning wolves during the early 20th century had any lasting effects on wolf abundance or distribution on Southeast Alaska islands (Porter 2018).

Alexander Archipelago wolves start breeding at 22-34 months of age, and litter sizes range from 1-8 pups, averaging 4.1 pups (USFWS 2015, Person et al. 1996, Person and Russell 2009). Person and Russell (2008) reported survival rates for Unit 2 wolves > 4 months of age as 0.54 between 1993 and 2004 (USFWS 2015). Den use occurs from mid-April through early-July after which pups are relocated to rendezvous sites usually <1 km from their den where they remain until October (USFWS 2015, Person and Russell 2009). Pack sizes on Prince of Wales Island (POW) average 7.6 wolves in the fall and 4.0 wolves in the spring, and home range sizes average 535 km^2, which is a quarter of the size estimated for wolves on the northern mainland of southeastern Alaska (ADF&G 2015d as cited in USFWS 2015).

New Harvest Management Strategy

Unit 2 is a good place to implement population objectives because there is very little dispersal into and out of the unit (ADF&G 2019d). The new wolf management strategy consists of four zones (**Figure 2**). Zone 1 sets the minimum wolf population threshold at 100 wolves and seasons would remain closed until the wolf population recovers. Zone 2 is the conservation zone where the wolf population is estimated between 100-149 wolves, and seasons of up to six week provide limited harvest opportunity and a buffer to recover the population before it declines into Zone 1. Zone 3 sets the population objective range at 150-200 wolves. This is the desirable zone, and harvest would occur during seasons of up to eight weeks. When the population is in Zone 3, SECR population estimates would only be conducted every 2-4 years. Zone 4 is the over-objective zone where wolf numbers exceed 200, and seasons of up to 4 months would be geared toward population reduction (ADF&G 2019b). An issue with this new strategy is the one year time lag in obtaining population estimates. For example, if the wolf population was in Zone 1, an additional trapping season would occur prior to managers learning this (ADF&G 2019b, 2019c). However, the HGL management strategy also announced harvest quotas based on population estimates that were at least one year old and, prior to 2014, were assumed estimates (**Figure 1**). State and Federal managers will announce season lengths annually before November 15, which is the opening date for Federal and State trapping seasons (Schumacher 2019, pers. comm.).

Setting these population objectives incorporated biological as well as social concerns as various user groups have strong and differing opinions about wolves in Unit 2 (e.g. subsistence deer hunters view wolves as competitors, ESA petitioners view wolves as threatened) (SERAC 2017, 2018, Wolf Technical Committee 2017, ADF&G 2019d). They also included traditional knowledge. The Craig Tribal Association testified that the USFS determined 150-200 wolves as a sustainable range after talking with local and traditional knowledge holders on POW (SERAC 2017). Similarly, a working group of the Council also thought the population objective range should be 150-200 wolves, which is the range the BOG adopted (SERAC 2017).

Stressors

Unit 2 wolves experience numerous stressors, including harvest, logging, road development, and climate-related events (USFWS 2015, Porter 2018). In their comprehensive status assessment for the Alexander Archipelago wolf, the USFWS (2015) determined the Unit 2 wolf population to have low resiliency due to high rates of unreported harvest, high rates of timber harvest with detrimental effects on deer, high insularity (little immigration or emigration), and high levels of boat and road access for hunters and trappers.

The presence of wolves in an area is closely linked with prey availability (USFWS 2015). While Unit 2 wolves feed on a variety of species including beavers and salmon, deer are their primary prey (USFWS 2015, Porter 2018). Both the comprehensive conservation assessment (Person et al. 1996) and the species status assessment (USFWS 2015) prepared in response to the 1993 and 2011 ESA listing petitions, respectively, identified maintaining deer populations as a primary conservation measure for Alexander Archipelago wolves (Porter 2018). Wolf abundance may be especially linked to deer

abundance and availability in Unit 2 where other ungulate prey species (e.g. moose, elk, caribou) are not present (USFWS 2015).

Deer are primarily limited by habitat rather than by predation (SERAC 2017, USFWS 2015). In Unit 2, deer habitat is adversely affected by industrial-scale logging of old-growth forests, which has occurred in the unit since the 1950s and peaked in the 1980s (USFWS 2015). Clearcut logging has been the primary timber harvesting method and, as of 2015, 23% of forests in Unit 2 were logged (Shanley 2015 as cited in USFWS 2015). Albert and Schoen (2007) modeled deer habitat capability in Unit 2 for two time periods (1954 and 2002), determining it to have lost 38% and 11% of its habitat value in northern and southern POW, respectively (USFWS 2015). USFWS (2015, 2016) predict that past timber harvest in Unit 2 will result in 21-33% declines in the deer population and 8-14% declines in the wolf population over the next 30 years, with future timber harvest exacerbating these declines. However, in 2014 (most recent information available), the Unit 2 deer population appeared to be stable to slowly increasing (Bethune 2015). USFWS (2016) states the rate of future timber harvest is difficult to project.

Declines in understory vegetation correspond with decreased deer carrying capacity (USFWS 2015). Severe (deep snow) winters often result in deer population declines (e.g. Brinkman et al. 2011), and these effects are exacerbated by loss of old-growth forests. Old-growth forests have multi-layered canopies that intercept snow and moderate temperature and wind, providing shelter for and facilitating movements of deer in the winter (USFWS 2015, Porter 2018). They also maintain diverse understories that provide continuous forage for deer (USFWS 2015). Conversely, clearcuts may temporarily provide deer with winter forage, but this forage can be buried during winters with deep snow (Porter 2018). The initial flush of forbs and shrubs in clearcuts provide deer with lower-quality forage, and regenerating trees shade out the understory vegetation after 20-35 years (Porter 2018, USFWS 2015). As Unit 2 timber harvest peaked in the 1980s, many stands are entering the successional stage that is very poor deer habitat (USFWS 2015).

In addition to altering the habitat of their primary prey species, logging also impacts Unit 2 wolves by constructing roads that provide relatively easy access for hunters and trappers into previously remote areas (Porter 2018, USFWS 2015). Person and Russell (2008) found roads clearly increased risk of death for POW wolves from hunting and trapping and contributed to unsustainable harvest rates. They also determined road density to be an important predictor of harvest up to 0.9 km of road per square kilometer (km/km^2). Above this threshold, increased road density did not correspond to increased harvest rates. Mean road density in Unit 2 is 0.62 km/km^2, ranging from 0-1.57 km/km^2 (Albert 2015 as cited in USFWS 2015). Person and Logan (2012) believe harvest from the densely roaded northcentral and central portions of POW are frequently unsustainable. The USFS aims to shift timber harvest to regenerating stands and away from old-growth stands, which also allows for the use of existing roads as opposed to constructing new ones (USFWS 2015, 2016).

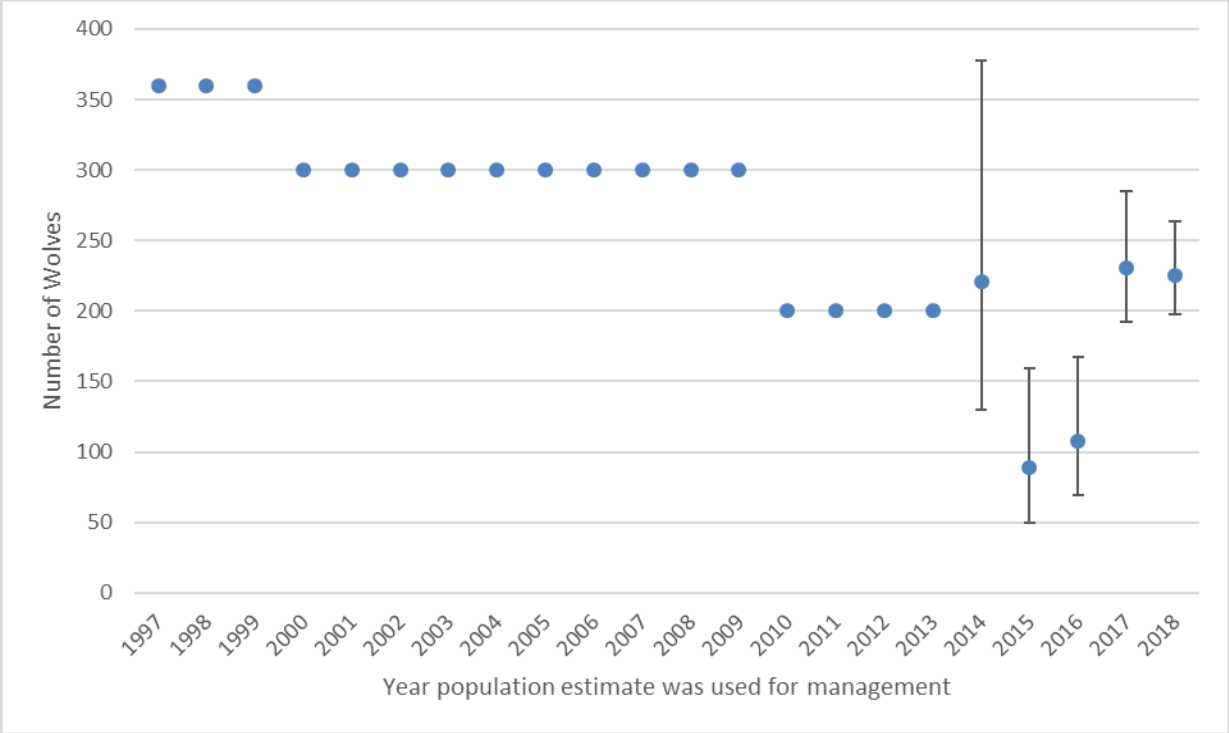

Figure 1. Unit 2 wolf population estimates, 1997-2018. Estimates from 1997-2013 are assumed from sealing records and a 1994 population estimate. Estimates from 2014-2018 are from a DNA mark/recapture study. The error bars represent 95% confidence intervals. Estimates take a year to determine; thus the population estimate for 2014 was used to set 2015 harvest quotas. The population estimates in this graph reflect the one year time lag (e.g. the 2015 population estimate actually reflects wolf numbers during fall 2014, but was used to set harvest quotas for the 2015 season) (Schumacher 2019, pers. comm.).

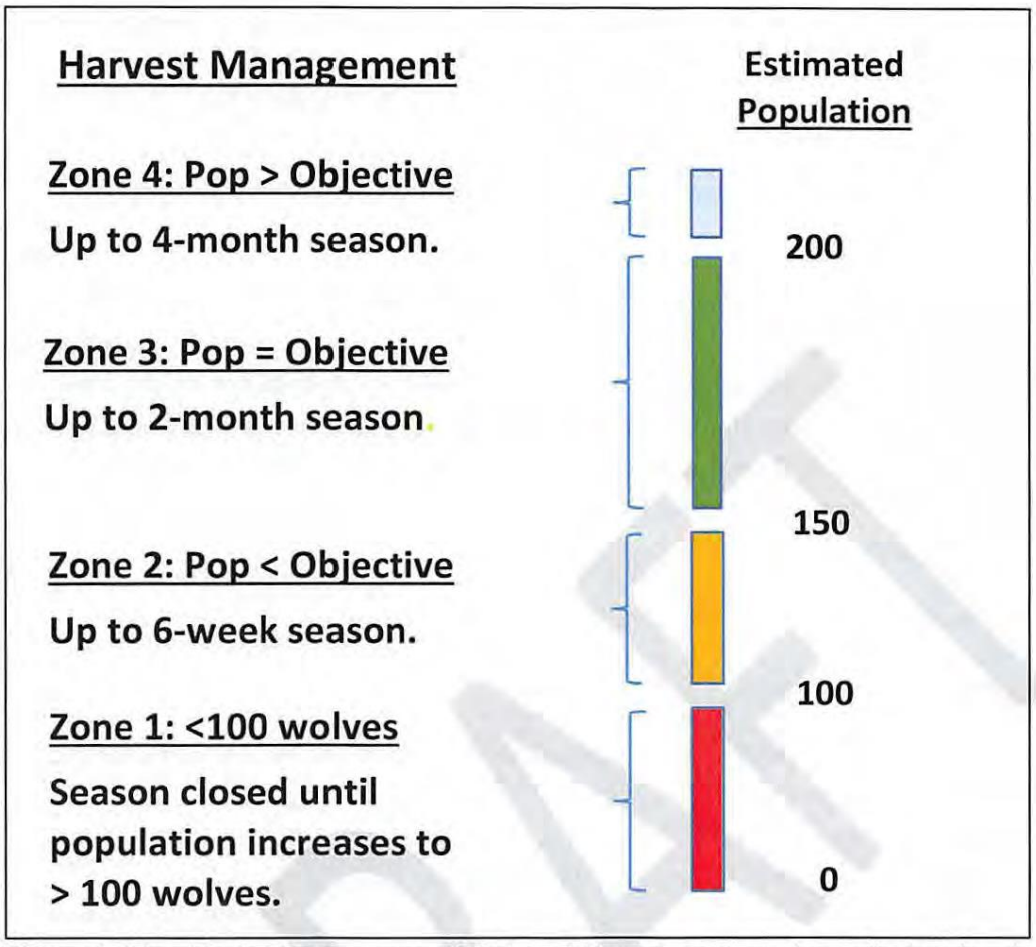

Figure 2. Population thresholds and harvest management strategies for the Unit 2 wolf population. The BOG adopted population objectives of 150-200 wolves in 2019 (figure from ADF&G 2019b).

Cultural Knowledge and Traditional Practices

Wolves were traditionally harvested for furs and hides throughout their range in Southeast Alaska (ADF&G 2008). Historically the fur of this species was used in making ceremonial masks, blankets, robes, and other articles of clothing (ADF&G 2008). The furs and hides were traded between communities and with other regions of the state (De Laguna 1972, Oberg 1973, Petroff 1884).

Wolves also occupy an important symbolic role in both Tlingit and Haida cultures. Tlingit society is divided into two moieties, which include the Raven and Eagle/Wolf (Emmons 1991). Within the moieties, several clans claim wolves as symbols or crests (Swanton 1909). Members of wolf clans ceremonially address wolves as relatives and believe the animals embody their ancestors (ADF&G 2008). These relationships are similar within the Haida culture, although the wolf is claimed by the Raven rather than the Eagle moiety (Blackman 1998).

Traditionally, wolves were harvested in the late fall and early winter because the fur was considered prime during these seasons and there was no deep snow to restrict travel (ADF&G 2008). Trapping usually started in November and continued through December, and was accomplished with snares and deadfalls set across game trails frequented by wolves (ADF&G 2003, ADF&G 2008, De Laguna 1972,

Goldschmidt and Haas n.d. [1946], Goldschmidt and Haas 1998, Oberg 1973). Families built and maintained trapping cabins in remote areas exhibiting high furbearer abundance and placed them in accordance with clan ownership rights (Goldschmidt and Haas 1998). Harvest areas were traditionally owned by clans that were inherited through family lineages (ADF&G 2008). The wolf's mythical and symbolic nature within Tlingit culture resulted in great care and respect being shown to both the living and harvested members of this species (ADF&G 2008). Wolves were not normally eaten, except as a famine food (ADF&G 2008).

Preparation of animal skins was traditionally assigned to women in both Tlingit and Haida cultural groups (Blackman 1998, Emmons 1991). The order of value among available furs within the Tlingit culture was sea otter, marten, beaver, river otter, black fox, mink, wolverine, wolf, and bear (Oberg 1973). Wolves contemporarily retain cultural value, and wolf harvest, sharing, and use have been recently documented in many areas of Southeast Alaska (ADF&G 2008). Wolf fur continues to be used in Native handicrafts such as blankets, ceremonial robes, winter coat ruffs, and art, but are also sold to commercial fur traders (ADF&G 2008).

Though wolves traditionally and contemporarily play important cultural and economic roles within Southeast Alaska, wolves are also now seen as a direct competitor for an important subsistence food source in Unit 2 – deer (Wolf Technical Committee 2017). Wolves also present other considerations for area residents including their role in both consumptive and non-consumptive tourism, as a top predator within the ecological system, and as a potential threat to humans and pets. It is believed that improving forage production within young-growth stands that are near areas preferred for human hunting of deer will help to alleviate some of the human-wolf-deer tensions in Unit 2 (Wolf Technical Committee 2017).

Harvest History

From the 1950s through the mid-1990s, wolf harvest in Unit 2 increased in conjunction with a growing human population and increased road access associated with the logging industry, peaking at 132 wolves in 1996 (**Figure 3**) (Porter 2018). Since 1996, trapper numbers in Unit 2 have generally been declining, possibly due to an aging trapper pool and a human population that is decreasing in response to fewer timber-related jobs (Bethune 2012). Between 1997 and 2018, total trapper numbers in Unit 2 ranged from 4-26 trappers per year, averaging 14.5 trappers per year (Schumacher 2019, pers. comm., Porter 2018). Over the same time period, trappers living in Unit 2 accounted for 60-100% of the annual Unit 2 wolf harvest, averaging 89% (Schumacher 2019, pers. comm., Porter 2018). Most of the non-local resident harvest is by residents of adjacent communities, including Ketchikan, Petersburg, Wrangell, and Sitka (Schumacher 2019, pers. comm.). (Note: As there is no customary and traditional use determination for wolves in Unit 2, all rural residents are Federally qualified subsistence users. Ketchikan and Juneau are the only non-rural communities in Southeast Alaska).

Between 1997 and 2018, average catch per trapper ranged from 1.8-5.5 wolves per trapper, averaging 3.4 wolves per trapper (Schumacher 2019, pers. comm., Porter 2018, Porter 2003). However, in most years, just 2-3 skilled trappers harvest most of the wolves (Schumacher 2019, pers. comm.). Between 1996 and 1998, ADF&G conducted household harvest surveys in all POW communities (ADF&G 2019e). The larger communities of Klawock and Craig accounted for 80% of the POW wolf harvest, and <.05% of the POW population attempted to harvest wolves (ADF&G 2019e).

Unit 2 wolf harvest is primarily monitored through mandatory sealing of pelts (Porter 2018). Harvest primarily occurs on non-Federal lands, including tide lands (ADF&G 2019d, SERAC 2017, Person and Logan 2012). Most wolves are harvested under a combination hunting/trapping license (Schumacher 2019, pers. comm.). The only wolves known to be taken under a hunting license are harvested from Sept. 1-Nov. 14 during the Federal hunting season, but before State and Federal trapping seasons open (Schumacher 2019, pers. comm.). In Unit 2, wolves can be harvested with a firearm under a trapping license under both State and Federal regulations.

Since 1997 when the HGL was initiated (see Regulatory History), annual reported wolf harvest has ranged from 7-96 wolves, averaging 50 wolves (**Figure 3**) (Schumacher 2019, pers. comm.). The annual harvest quota has been exceeded five times (**Table 1**). Most wolves are harvested using traps and relatively few are shot. Between 1997 and 2018, 21%, 53%, and 25% of harvested wolves were shot, trapped, and snared, respectively (Schumacher 2019, pers. comm., Porter 2018, Bethune 2012).

Most of the wolf harvest in Unit 2 occurs in January and February when pelts are most prime and fur prices are highest (Porter 2018). Since 2015, most of the wolf harvest has occurred in December because seasons have closed early by emergency order (ADF&G 2019c). Little harvest occurs before December (Porter 2018, SERAC 2017). Between 1997 and 2014, 60% of wolf harvest occurred in January and February on average (Schumacher 2019, pers. comm., Porter 2018, Bethune 2012). Over the same time period, 3% of wolves were harvested before December on average. Between 2015 and 2018, 32% of wolves were harvested before December on average due to seasons closing early (Schumacher 2019, pers. comm., Porter 2018, Bethune 2012).

Unreported human-caused mortality includes wounding loss, illegal harvest, and vehicle collisions. As part of an ADF&G research program, Person and Russell (2008) estimated unreported human-caused mortality as 47% of total human-caused mortality based on a study of 55 radio-collared wolves in which 16 of 34 human-caused wolf kills were unreported. Most of the unreported kills were either shot out of season or killed during open seasons and not reported (Person and Russell 2008). Later in the research program, ADF&G reported three of eight radio-collared wolves that died during their study were not reported, suggesting 38% of human-caused wolf kills are unreported (USFWS 2015, Schumacher 2019, pers. comm.). Thus, unreported harvest accounts for a substantial portion of wolf harvest in Unit 2, which likely resulted in unsustainable harvests in some years (**Figure 4**) (USFWS 2015, 2016). USFWS (2016) estimated mean total (reported and unreported) annual harvest as 29%, ranging from 11-53%, and concluded that harvest has impacted the Unit 2 wolf population. However, unreported harvests are implicitly accounted for with the new management strategy as management is based on population estimates and objectives rather than on harvest quotas and reported harvests.

USFWS (2015) notes harvest may explain most of the 2013-2014 population decline if unreported harvest is considered. Relatively easy boat and road access may contribute to high rates of unreported harvest in Unit 2, while the insularity of the population makes it more susceptible to overharvest (USFWS 2015). However, as few wolves in Unit 2 are currently radio-collared, documenting unreported human-caused mortality is difficult and accounting for it when setting harvest quotas was a contentious issue (Porter

2018). Additionally, testimony from Federally qualified subsistence users to the Council indicates high levels of illegal harvest is not occurring (SERAC 2017).

In 1999, the wolf season closed early by emergency order for the first time. Afterward, annual reported harvest declined substantially (Person and Logan 2012, Bethune 2012). Similarly, Porter (2003) notes that the number of successful trappers averaged 17 per year from 1999-2001, which was well below the 10-year average of 27 successful trappers per year. Between 2002 and 2014, the number of successful trappers averaged 12 trappers per year (Porter 2018). The threat of early season closures likely discourages hunters and trappers from reporting their harvests, and harvest data after 1999 may be less accurate than harvest data prior to 1999 (Person and Logan 2012). Prior to the public meeting for WSA19-02, a wolf trapper from POW mentioned he would wait until the 14th day to seal his wolf pelts in an effort to extend the wolf season.

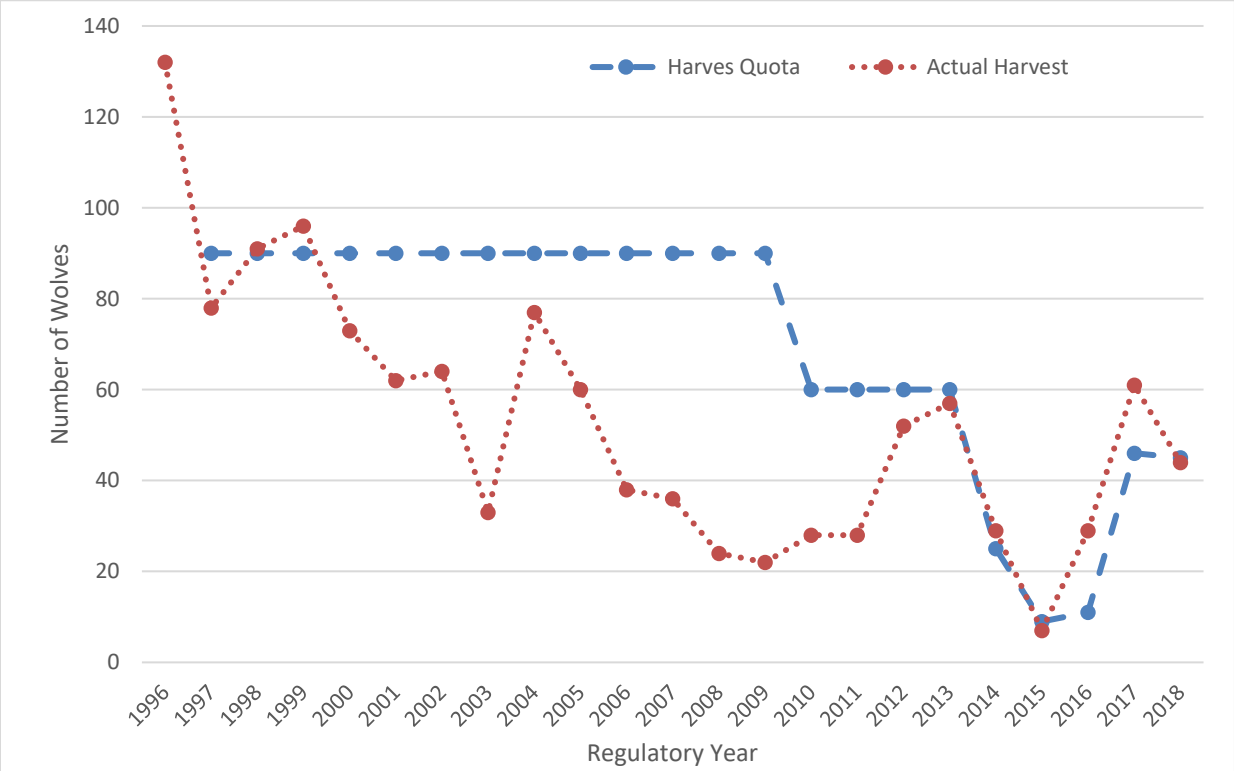

Figure 3. Unit 2 wolf harvest and harvest quotas, 1996-2018. Harvest includes reported harvest and other documented human-caused mortality (e.g. vehicle collisions) (Schumacher 2018, pers. comm., Porter 2018).

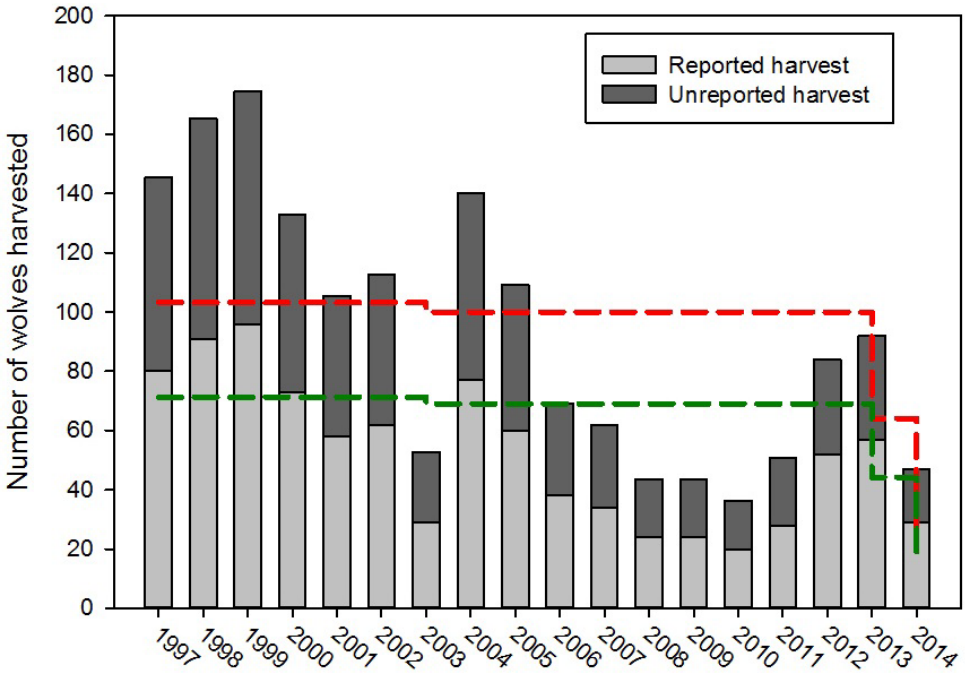

Figure 4. Estimated total number of wolves harvested by regulatory year in Unit 2, 1997-2014. Unreported harvest was estimated using a rate of 0.45 of total harvest from 1997-2011 (Person and Russell 2008) and a proportion of 0.38 of total harvest from 2012-2014 (ADF&G 2015a as cited in USFWS 2015). The green and red dotted line indicates 20% and 30% HGL, respectively (figure from USFWS 2015).

Effects of the Proposal

If the Board adopts Proposals WP20-16/17, the sealing requirement will be extended to 30 days after the end of the season, the combined Federal-State harvest quota will be eliminated, and the hunting harvest will become "no limit." Extending the sealing requirement will align with the new sealing requirement for the State trapping season, but does not align with the State hunting season. Also, subsistence users will be able to seal all of their wolf pelts at once rather than sealing them piece meal throughout the season. Extending the sealing requirement should have no effect on wolf harvest or abundance since the new management strategy depends on population objectives rather than on in-season harvest tracking (ADF&G 2019d).

Changing the hunting harvest limit to "no limit," increases harvest opportunity for Federally qualified subsistence users, but will likely have little effect on harvest and the wolf population. Most trappers in Unit 2 average less than 5 wolves per year, and only 2-3 skilled trappers typically account for most of the Unit 2 wolf harvest (Schumacher 2019, pers. comm., Porter 2018, 2003). Additionally, few wolves in Unit 2 are taken under a hunting license and an unlimited number of wolves can already be harvested with a firearm under a trapping license. Therefore, the increased harvest opportunity would occur Sept. 1-Nov. 14 as the trapping season opens on November 15. While wolf pelts have been reported to prime early in Unit 2 (OSM 2003), the quality of a pelt harvested in September is questionable, although shorter fur is sometimes preferred for skin sewing. As the Southeast Council did not provide specific

justification for why the increased hunting harvest limit was necessary in their proposal, OSM hopes the Council will provide justification on the record at their fall 2019 meeting.

An issue identified with the HGL management strategy was that it focused only on the percentage of wolves to harvest and not on how many wolves should be in the population. Without population objectives, State and Federal managers had to decide when the population was too low or too high, whereas population objectives determined through a public process such as BOG proposals clarifies goals, providing guidance to managers and building buy-in among stakeholders (SERAC 2019, ADF&G 2019b, 2019d). Specifically, establishing population objectives provides managers with a quantitative benchmark to gauge successful management, helps guide habitat management and regulatory planning, and mitigates disagreements between stakeholders over what is a sustainable wolf population (Wolf Technical Committee 2017, ADF&G 2019d).

Additionally, the HGL management strategy discouraged hunters and trappers from reporting harvest to prevent the season from closing early. Early season closures also created hardships for trappers who could not plan for when they needed to pull traps. In 2018, the wolf season closed by emergency order on December 18, but was reopened until December 21 due to bad weather that prevented trappers from pulling their traps. Managing for a population objective and announcing season lengths ahead of time provides predictability, allowing trappers to plan and prepare for the season and, importantly, does not discourage reporting harvests (ADF&G 2019d). The new wolf management strategy further alleviates concerns about illegal or unreported harvests by basing management on population estimates and objectives rather than on harvest quotas (SERAC 2019).

While the new management strategy depends on year-old population estimates to determine season lengths, the HGL management strategy depended on year-old population data to announce harvest quotas (since 2014). Although the SECR population estimates may only be produced every 2-4 years at some point in the future, ADF&G may employ other monitoring techniques to assess the Unit 2 wolf population. These techniques include trail cameras to document wolf reproduction and relative abundance, and measuring the foreleg bones of harvested wolves to monitor age structure and recruitment (ADF&G 2019b).

One of the reasons a species can be listed under the ESA is inadequacy of existing regulatory mechanisms. In response to the 2011 ESA listing petition, USFWS (2016) found wolf harvest regulations in Unit 2 to be inadequate to avoid exceeding sustainable harvests (although their inadequacy would not impact the rangewide population). In 2016 and 2017, actual harvest well exceeded the harvest quota, suggesting that the HGL management strategy does not work (SERAC 2017) and reaffirming USFWS' (2016) assessment of inadequate regulations. Even the relatively short sealing requirement resulted in a two week time lag, making it difficult to monitor harvest and to project when quotas would be met (SERAC 2017, 2018). Establishing population objectives through a public process reduces the likelihood of future litigation (Wolf Technical Committee 2017).

The Southeast Regional Supervisor of the Wildlife Division of ADF&G stated at the fall 2017 Council meeting, "Monitoring harvest using sealing records didn't work, so what's a better idea?" (SERAC 2017, p. 189). Council members stated establishing population goals would constitute "something better" (p.

249) and encouraged State and Federal staff to work toward setting population goals for Unit 2 wolves, "so that we're not bouncing around endlessly on is it 20% [or] is it 30%?" (SERAC 2017, p. 442).

While managing harvest through season length may initially result in more or less wolves harvested than expected, State and Federal managers can fine tune season lengths over time once patterns between season length and harvest are better established (SERAC 2019). Past experiences indicate mixed results when using season length as a means for limiting harvest. After the BOG shortened State trapping and hunting seasons in 1997, wolf harvest declined by 12% (Porter 2003). However, since 1997, wolf harvest has varied considerably in years not closed by emergency order (22-96 wolves per year), although State seasons have not changed. Every season since 2013 has been closed by emergency order, and harvest in these years has also varied considerably (7-61 wolves per year). In 2015, seven wolves were harvested during a five week Federal and three week State season. In 2017, 61 wolves were harvested during a 4.5 week Federal and 2.5 week State season (**Table 1**). This suggests harvest is more a function of abundance rather than season length. Additionally, wolves exhibit high resiliency to human harvest and population declines as evidenced by their population rebound under conservative management since 2014 and high reproductive potential (SERAC 2017, USFWS 2015).

The Federal in-season manager (Craig District Ranger) currently has delegated authority to close, reopen, or adjust the Federal hunting and trapping seasons for wolves in Unit 2. Previously, the Federal in-season manager decided when to close the season based on harvest quotas. If this request is approved, this individual would determine season lengths in cooperation with State managers based on the new harvest management strategy, although maintains the flexibility to close/re-open/adjust Federal seasons at his/her discretion. However, the State will not announce its season length until fall 2019 after the 2018 population estimate is available. While the Federal hunting season opens three months earlier than the State hunting season, the proponent's intent was to maintain the Sept. 1 opening date regardless of the new management strategy to provide subsistence opportunity for wolf harvest while deer hunting.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-16 and Proposal WP20-17.

Justification

Effective wolf management in Unit 2 depends upon coordination between State and Federal regulations, in-season managers, and users. Adopting these proposals aligns Federal and State wolf management strategies, facilitating management and reducing user confusion. Eliminating the combined State-Federal harvest quota under Federal regulations clarifies in-season management as the State no longer uses harvest quotas. Extending the sealing requirement decreases the regulatory burden on Federally qualified subsistence users and aligns Federal hunting and trapping sealing requirements with State trapping requirements, reducing regulatory complexity. Increasing the hunting harvest limit provides additional harvest opportunity to Federally qualified subsistence users and should have little impact on the wolf population as few wolves are harvested before the trapping season opens.

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WRITTEN PUBLIC COMMENTS

June 25, 2019
TO: Federal Board of Subsisence Management, (Att: Theo Mutskowitz)
FROM: Alaskans FOR Wildlife and any Cooperating Entities
RE: Comments on Subsistence Proposals

Please consider these comments on numbered proposals. Comments are offered from a public perspective that reflects several major considerations which we earnestly wish you and the board to keep clearly in mind as you make decisions on these and all proposals offered, namely,

1) The lands in question are publically owned lands belonging to all US citizens who in theory and in law all have interest in how wildlife on these lands are managed, and
2) Article 8 of our Alaska Constitution clearly sets forth that ALL (emphasis) Alaskans are stakeholders, all essentially owners, with respect to its natural resources and how they are managed .

WP-20 Wolf Trapping lifting harvest restrictions and extending sealing time.
OPPOSE

This proposal leads to spreading unrestricted wolf take everywhere. Given especially the substantial science on the value of apex predators plus the high interest in sustaining wolf populations on American public lands including here in Alaska as essential to maintenance of ecosystem biodiversity, we maintain that enactment of this proposal would result in another chapter in the unscientific overall continued war on wolves. This proposal to lift harvest limits and to extend sealing limits also already excessive in length are not scientifically justified nor justified as a pubic matter given the overall value of wolves to maintenance of biodiversity. It must not pass.

WP20-17 – Removing harvest quotas and sealing requirements for hunting wolves, OPPOSE.
We oppose this proposal for the same reasons offered to oppose the previous proposal, WP20-16.
The values of wolves as apex predator and its place in American culture must have bearing upon this consideration. No science and no national or even Alaskan public cultural norms can possibly support this permissively reckless proposal to expand wolf take without bounds. It must not pass.

-3-

WP20-26 Permitting the use of snowmachines to "position" wildlife for harvest. OPPOSE

This proposal would expand this practice apparently from other land management units. In essence "positioning" is another term for what in reality will result in chasing, and harassing wildlife to exhaustion, prohibitions in the regulation notwithstanding, due to impossible enforcement limitations. As an example, when asked to explain existing regulations for snowmachine use in trapping and hunting, an Alaska wildlife trooper explained he does not even understand the regulation.

Expanded snowmachine use, "positioning," will amount to a continued enforcement challenge. Widespread abuse will surely result and will continue to give subsistence the reputation of abuse when it really needs public support: we feel that as we now face mass extinctions of wildlife species; there is new public and growing focus on the crisis. This is an extremely unwise plunge to the bottom and we caution a futuristic consideration.

WP20-08 Proposal to require traps and snares to be marked with name and state identification number.

-4-

SUPPORT This proposal is topical, even in urban municipalities of Alaska as conflicts in public use areas resulting in injuries to hikers, pets and other outdoor public land users rise .

Keeping in mind even the use of more remote public lands grows as outdoor users of their lands increase, the potential for conflicts including serious injuries resulting from hidden owner-unidentified traps will increase. Organized trappers have strongly opposed such requirements as proposed here in past requests for change considered by the Alaska Board of Game. We witness the public land users (including of federal lands) would most certainly strongly favor this accountability. We strongly favor this proposal.

In closing, please carefully consider these comments as you go forward with the process over the next year or so. WE thank you for your consideration of these comments.

Sincerely,

Jim Kowalsky,
Chair, Alaskans FOR Wildlife
PO Box 81957
Fairbanks, Alaska 99708
907-488-2434

WP20–08 Executive Summary	
General Description	Proposal WP20–08 requests implementing a statewide requirement that traps and snares be marked with either the trapper's name or State identification number. *Submitted by: East Prince of Wales Advisory Committee.*
Proposed Regulation	**Statewide— Trapping (General Provisions)** ***Traps or snares must be marked with trapper's name or state identification number (Alaska driver's license number or State identification card number).***
OSM Preliminary Conclusion	**Oppose**
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	

WP20–08 Executive Summary	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**1 Support, 1 Oppose**

DRAFT STAFF ANALYSIS
WP20-08

ISSUES

Wildlife Proposal WP20-08, submitted by the East Prince of Wales Fish and Game Advisory Committee, requests implementing a statewide requirement that traps and snares be marked with either the trapper's name or State identification number.

DISCUSSION

The proponent believes that current regulations do not allow for accountability if a trapper leaves their traps out and set after the close of the season, or chooses to use illegal baits (i.e., whole chunks of deer meat or whole migratory birds). The proponent believes requiring trap identification (Alaska issued driver's license number or personal identification number) would make enforcement easier and may prevent these issues. Clarification with the proponent indicated that the proposed marking requirement is to apply Statewide.

Existing Federal Regulation

There are no statewide trap marking requirements under Federal regulations.

Proposed Federal Regulation

Statewide— Trapping (General Provisions)

Traps or snares must be marked with trapper's name or state identification number (Alaska driver's license number or State identification card number).

Existing State Regulation

There are no statewide trap marking requirements under State regulations.

Extent of Federal Public Lands/Waters

Alaska is comprised of 65% Federal public lands and consist of 23% Bureau of Land Management (BLM) managed lands, 21% U.S. Fish and Wildlife Service (USFWS) managed lands, 15% National Park Service (NPS) managed lands, and 6% U.S. Forest Service (USFS) managed lands.

Customary and Traditional Use Determinations

Customary and traditional use determinations for specific areas and species are found in subpart C of 50 CFR 100, §___.24(a)(1) and 36 CFR 242 §___.24(a)(1).

Regulatory History

The Alaska Board of Game (BOG) adopted a marking requirement for traps and snares in Units 1–5 in 2006. Federal regulations were aligned with the State requirements in Units 1–5 when the Federal Subsistence Board (Board) adopted Proposal WP12-14 in 2012. The rationale of the Board was that the BOG adopted trap marking requirements for Units 1-5 in 2006 in response to concerns by Alaska Wildlife Troopers, the Alaska Department of Fish and Game (ADF&G), and members of the public, that trapping as a whole would benefit from having some way of identifying ownership of traps and snares. This was prompted by incidences of traps being placed in areas where trapping was not allowed, pets being caught in traps, and unattended snares still capable of capturing a passing deer, bear, or wolf, being found following the close of season (FSB 2012).

The Southeast Alaska Subsistence Regional Advisory Council (Council) expressed concern that there was a lack of evidence why traps should be marked in either State or Federal regulations, and stated that regulations should be adopted for a good reason and not because of "*one bear caught in a snare, set by an unknown person for an unknown reason*". However, the Council supported the proposal, stating the benefit of aligning Federal and State regulations, and reducing the uncertainty about whether current regulations required traps to be marked (SEASRAC 2011).

In 2014, the Board considered Proposal WP14-01, requesting new statewide Federal provisions requiring trapper identification tags on all traps and snares, the establishment of a maximum allowable time limit for checking traps, and establishment of a harvest/trapping report form to collect data on non-target species captured in traps and snares. The proposal analysis indicated statewide application would be unmanageable, would require substantial law enforcement and public education efforts, and could cause subsistence users to avoid the regulation by trapping under State regulations. The proposal was unanimously opposed by all ten Federal Subsistence Regional Advisory Councils, ADF&G, and the public as reflected in written public comments. The Board rejected the proposal as part of its consensus agenda (FSB 2014).

In March 2016, the BOG removed trap marking requirements in response to Proposal 78. The BOG determined that trappers are generally responsible and that the 2006 regulation was not addressing the reasons why it was implemented, noting that marking traps does not prevent illegal trapping activity or prevent dogs from getting trapped.

In 2018, the Board considered Proposal WP18-13, requesting removal of the trap marking requirement in Units 1-5. The proposal was submitted to remove an unnecessary and burdensome requirement on Federally qualified subsistence users and to realign State and Federal regulations. While ADF&G was neutral on the proposal, it was unanimously supported by the Council (SEASRAC 2017). The proposal was adopted by the Board as part of its consensus agenda (FSB 2018).

Current Events Involving the Species

Wildlife proposal WP20-20 has been submitted requesting that trap sites be marked with brightly colored surveyor's tape in plain view on a nearby tree or overhanging branch in Unit 7.

Effects of the Proposal

The proposal will not result in any positive or negative effects to furbearer or other non-furbearer wildlife populations.

If the proposal is adopted, Federally qualified subsistence users trapping under Federal regulations throughout the State will be required to mark traps and snares with identification tags. The proposed requirement could potentially benefit law enforcement by allowing easier identification of traps and snares set in the field. However, differences in land ownership, population concentrations, terrain, and habitats would limit the effectiveness of the proposed statewide regulation. Individual traplines can span across Federal and State managed lands and, therefore, could have different regulatory requirements along the line. Alternatively, Federally qualified subsistence users could simply choose to trap under State regulations and avoid the proposed requirement, as both Federal and State trapping regulations are applicable on most Federal public lands, as long as the State regulations are not inconsistent with or superseded by Federal regulations, or unless Federal lands are closed to non-Federally qualified users.

Within portions of Unit 15, over 60 percent which lies within Kenai National Wildlife Refuge, and those portions of Unit 7 that are contained within Kenai NWR, a trapping permit is required and a stipulation of Kenai NWR's permit includes the marking of traps and snares. Also, under State regulations, all snares within a quarter mile of a public road in Units 12 and 20E are required to be marked. Federally qualified subsistence users trapping on Federal public lands outside of these specific areas would be required to mark traps and snares with identification tags that include the trapper's name and license number. However, Federally qualified subsistence users trapping on Federal public lands would not be required to mark traps and snares under State regulations.

The requirement to mark traps and snares would also result in additional burden and cost for Federally qualified subsistence users trapping under Federal subsistence regulations. Copper tags stamped with a trapper's identification information, including fasteners, cost approximately $26 per 100 tags (including shipping) or less (approximately $15–$20) for "write-your own" tags (FWS 2012). In addition, trappers often trade or borrow equipment from family members or friends, and changes of identification tags on large numbers of traps or snares would require significant effort (FWS 2014).

Re-implementation of a mandatory requirement to mark traps under Federal regulations creates unnecessary divergence of State and Federal regulations, which may create confusion for Federally qualified subsistence users. Although adoption of the proposal could allow law enforcement to more easily identify trappers that have traps deployed outside the open season or have otherwise violated regulations, mandatory trap marking does not necessarily prevent illegal trapping activity or prevent dogs from getting trapped. Also, adoption of this proposal will not affect State regulations, which would allow Federally qualified subsistence users to operate traps under State regulations to avoid this requirement.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP20-08.

Justification

Requiring Federally qualified subsistence users to mark traps is an unnecessary burden, as mandatory marking does not prevent illegal trapping activity. With State regulations being less restrictive, Federally qualified subsistence users could avoid the requirement by trapping under those regulations, essentially rendering a Federal marking requirement unenforceable. There is no anticipated conservation concern to furbearers with opposing this proposal, as there is no established correlation between furbearer harvest levels and trap marking requirements. Adoption of this proposal also creates unnecessary divergence between State and Federal regulations.

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WRITTEN PUBLIC COMMENTS

Ketchikan Advisory Committee
June 6th, 2019
ADF&G Conference Room

I. **Call to Order**: 5:40pm by Matt Allen, Secretary

II. **Roll Call:** 8 voting members present, 1 via phone
Members Present: Allen, Crittenden, Dale, James, Westlund, Roth, Shaw, Bezneck, Fox, Scoblic (Phone)
Members Absent (Excused): Doherty, McQuarrie, Skan, Franulovich, Miller
Members Absent (Unexcused):
Number Needed for Quorum on AC: 8
List of User Groups and Public Present: Public, Sportfish Charter, ADFG (Sport Fish, Wildlife)
Motion: Bezneck, motion to make Allen meeting Chair, Roth, second. 9-0 in favor. Allen sits as meeting Chair

III. **Approval of Agenda:**
Allen, motion to amend agenda to include discussion of Federal Subsistence Proposals 10, 11, 13,14. Westlund seconded. Motion passed unanimously (9-0). Westlund, moved to approve agenda, Dale seconded. Motion passed unanimously (9-0)

IV. **Approval of Previous Meeting Minutes:**
Previous meeting minutes incomplete at this time

V. **Fish and Game Staff Present:**
Kelly Reppert, Ross Dorendorf, Tessa Hasbrouck

VI. **Guests Present: Jim Moody, Nick Hashagan, Martin Caplan, Tony Azure**

VII. **Chairman Report: Allen** read co-chair letter from Scoblic/Doherty

VIII. **ADF&G Sportfish Report: Reppert**, report regarding catch and release chinook fishing. Discussion and comment followed report.

IX. **Old Business:**
Federal Subsistence Proposals 2020-2022, WP20-01-08, WP20-10-15

X. **New Business:**
Catch and Release of chinook by Charter fishermen
Set next meeting date, September 12th, 2019, 5:30pm ADFG Conference Room

Federal Subsistence Management Program 2020-2022 Wildlife Proposal Comments			
Proposal Number	**Proposal Description**		
Support, Support as Amended, Oppose, No Action	**Number Support**	**Number Oppose /Abstain**	**Comments, Discussion (list Pros and Cons), Amendments to Proposal, Voting Notes**
WP20-01	Southeast, Moose, Unit 1C, Eliminate Unit 1C – Berners Bay moose hunt		
Support	8	0/1 abstain	A biological concern does not currently exist necessitating a subsistence priority. Majority of traditional use comes from Juneau area. A fair system is currently in place to provide for opportunity
WP20-02	Southeast, Deer, Unit 2, Remove harvest limits to non-federally qualified users		
Support	9	0	We support State managers in their assessment of the deer population and the opportunity it can support.
WP20-03	Southeast, Deer, Unit 2, Eliminate doe harvest		
Oppose	1	8	Though the AC does not agree with doe harvest, we do not support this proposal because it would have minimal impact.
WP20-04	Southeast, Deer, Unit 2, Revise harvest limit		
Oppose	3	6	Some AC members support cessation of doe harvest if only for a short period of time.
WP20-05	Southeast, Deer, Unit 2, Establish a registration permit for does		
Support	7	1/1	AC supports the proposal as it may lead to better data for management.
WP20-06	Southeast, Deer, Unit 2, Revise season		
Support	9	0	AC supports removal of January hunt due to small amount of harvest, reduced quality of meat and difficulty in distinguishing bucks and does.
WP20-07	Southeast, Deer, Unit 2, Revise harvest limit		
Support	9	0	
WP20-08	Statewide, All Trapping Species, Require traps or snares to be marked with name or State Identification number		
Oppose	1	8	Though some type of compromise should be reached in regards to labelling of traps/snares a one size fits all regulation could be overly burdensome in some areas
WP20-09	Southeast, Beaver, Units 1-4, Revise trapping season		
No Action			
WP20-10	Statewide, Black Bear, Units 1-5, Revise Customary and Traditional Use Determination		

Oppose	2	6	Hunting of Black Bear is not customary and traditional in all units residing in Southeast
WP20-11	Statewide, Brown Bear, Units 1-5, Revise Customary and Traditional Use Determination		
	3	4	Hunting of Brown Bear is not customary and traditional in all units residing in Southeast.
WP20-12	Southeast, Deer, Unit 3, Revise hunt areas, season dates, and harvest limits		
WP20-13	Statewide, Elk, Unit 3, Establish Customary and Traditional Use Determination		
	0	9	This is a population introduced by the State in 1986, due to this fact we do not believe this population is traditional and customary for any Unit in Southeast Alaska. The authors of this proposal do not demonstrate how this particular species in this area has been used to meet the definition as customary and traditional.
WP20-14	Statewide, Goat, Unit 1-5, Revise Customary and Traditional Use Determination		
	4	4	Hunting of Mountain Goat is not Customary and Traditional in all Units residing in Southeast.
WP20-15	Statewide, Moose, Unit 1-5, Revise Customary and Traditional Use Determination		
	0	8	Hunting of Moose is not customary and traditional in all units residing in Southeast.
WP20-16	Statewide, Wolf, Unit 2, Eliminate harvest limit/quota and revise sealing requirement		
No Action			
WP20-17	Statewide, Wolf, Unit 2, Eliminate harvest limit/quota and revise sealing requirement		
No Action			

Adjournment:

Minutes Recorded By: _____
Minutes Approved By: _____
Date: _____

June 25, 2019
TO: Federal Board of Subsisence Management, (Att: Theo Mutskowitz)
FROM: Alaskans FOR Wildlife and any Cooperating Entities
RE: Comments on Subsistence Proposals

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WP-20 Wolf Trapping lifting harvest restrictions and extending sealing time.
OPPOSE

-2-

This proposal leads to spreading unrestricted wolf take everywhere. Given especially the substantial science on the value of apex predators plus the high interest in sustaining wolf populations on American public lands including here in Alaska as essential to maintenance of ecosystem biodiversity, we maintain that enactment of this proposal would result in another chapter in the unscientific overall continued war on wolves. This proposal to lift harvest limits and to extend sealing limits also already excessive in length are not scientifically justified nor justified as a pubic matter given the overall value of wolves to maintenance of biodiversity. It must not pass.

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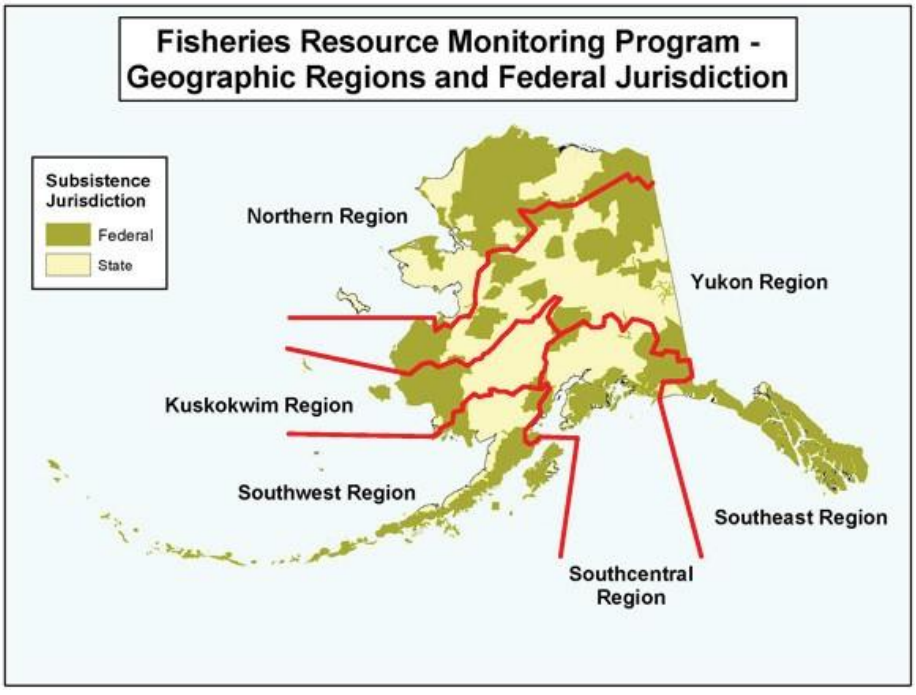
Sincerely,
Jim Kowalsky,
Chair, Alaskans FOR Wildlife
PO Box 81957
Fairbanks, Alaska 99708
907-488-2434

FISHERIES RESOURCE MONITORING PROGRAM

BACKGROUND

Section 812 of the Alaska National Interest Lands Conservation Act (ANILCA) directs the Departments of the Interior and Agriculture, cooperating with other Federal agencies, the State of Alaska, and Alaska Native and other rural organizations, to research fish and wildlife subsistence uses on Federal public lands; and to seek data from, consult with, and make use of the knowledge of local residents engaged in subsistence. When the Federal government assumed responsibility for management of subsistence fisheries on Federal public lands and waters in Alaska in 1999, the Secretaries of the Interior and Agriculture made a commitment to increase the quantity and quality of information available to manage subsistence fisheries, to increase quality and quantity of meaningful involvement by Alaska Native and other rural organizations, and to increase collaboration among Federal, State, Alaska Native, and rural organizations. The Fisheries Resource Monitoring Program (Monitoring Program) is a collaborative, interagency, interdisciplinary approach to enhance fisheries research and data in Alaska and effectively communicate information needed for subsistence fisheries management on Federal public lands and waters.

Every two years, the Office of Subsistence Management announces a funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The 2020 Notice of Funding Opportunity focused on priority information needs developed by the Subsistence Regional Advisory Councils with input from strategic plans and subject matter specialists. The Monitoring Program is administered through regions to align with stock, harvest, and community issues common to a geographic area. The six Monitoring Program regions are shown below.



Strategic plans sponsored by the Monitoring Program have been developed by workgroups of fisheries managers, researchers, Subsistence Regional Advisory Councils, and by other stakeholders for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska, and for Yukon and Kuskokwim drainages whitefish (available for viewing at the Monitoring Program webpage at https://www.doi.gov/subsistence/frmp/plans). These plans identify prioritized information needs for each major subsistence fishery. Individual copies of plans are available from the Office of Subsistence Management by calling (907) 786-3888 or toll Free: (800) 478-1456 or by email subsistence@fws.gov. An independent strategic plan was completed for the Kuskokwim Region for salmon in 2006 and can be viewed at the Alaska-Yukon-Kuskokwim Sustainable Salmon Initiative website at https://www.aykssi.org/salmon-research-plans/.

Investigation plans are reviewed and evaluated by Office of Subsistence Management and U.S. Forest Service staff, and then scored by the Technical Review Committee. The Technical Review Committee's function is to provide evaluation, technical oversight, and strategic direction to the Monitoring Program. Each investigation plan is scored on the following five criteria: strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit.

Project executive summaries are assembled into a draft 2020 Fisheries Resources Monitoring Plan. The draft plan is distributed for public review and comment through Subsistence Regional Advisory Council meetings, beginning in September 2019. The Federal Subsistence Board will review the draft plan and will accept written and oral comments at its January 2020 meeting. The Federal Subsistence Board forwards its comments to the Assistant Regional Director of the Office of Subsistence Management. Final funding approval lies with the Assistant Regional Director of the Office of Subsistence Management. Investigators are subsequently notified in writing of the status of their proposals.

HISTORICAL OVERVIEW

The Monitoring Program was first implemented in 2000 with an initial allocation of $5 million. Since 2000, a total of $117 million has been allocated for the Monitoring Program to fund a total of 452 projects (**Figure 1** and **Figure 2**).

During each two-year funding cycle, the Monitoring Program budget funds ongoing multi-year projects (2, 3, or 4 years) as well as new projects. Budget guidelines are established by geographic region (**Table 1**). The regional guidelines were developed using six criteria that included level of risk to species, level of threat to conservation units, amount of subsistence needs not being met, amount of information available to support subsistence management, importance of a species to subsistence harvest, and level of user concerns regarding subsistence harvest. Budget guidelines provide an initial target for planning; however, they are not final allocations and are adjusted annually as needed (**Figure 3)**.

Figure 1. Monitoring Program Funds Distributed, by Organization Type, Since 2000

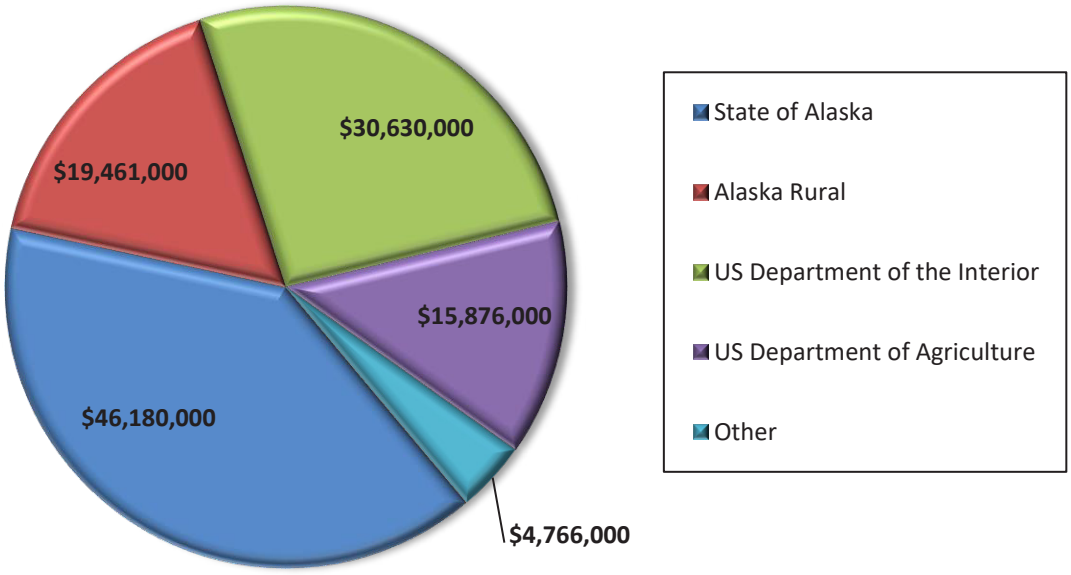


Figure 2. Number of Monitoring Program Projects Funded, by Organization Type, since 2000

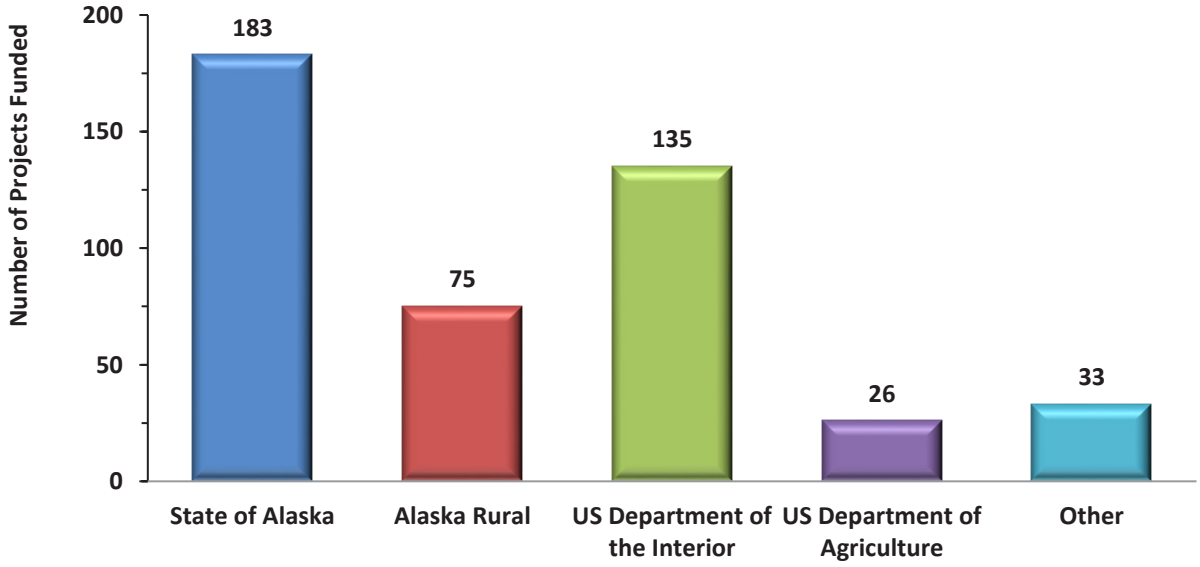
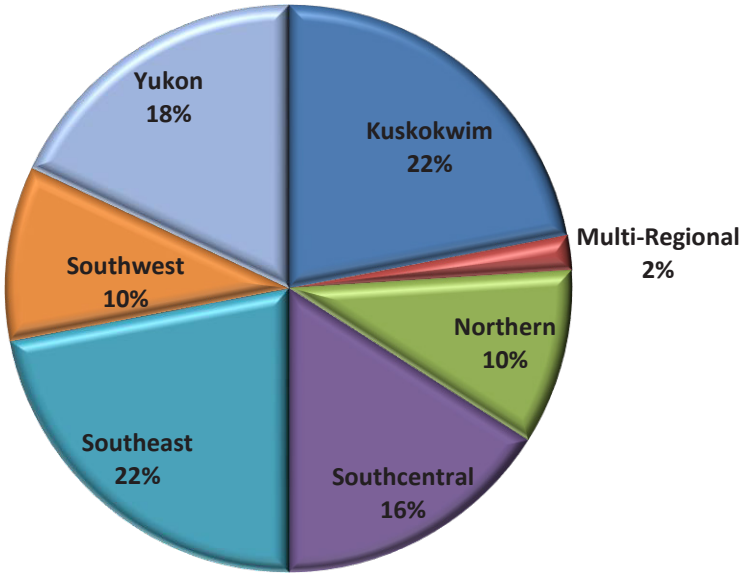


Table 1. Regional allocation guideline for Fisheries Resource Monitoring Program Funds.

Region	U.S. Department of the Interior Funds	U.S. Department of Agriculture Funds
Northern Alaska	17%	0%
Yukon Drainage	29%	0%
Kuskokwim Drainage	29%	0%
Southwest Alaska	15%	0%
Southcentral Alaska	5%	33%
Southeast Alaska	0%	67%
Multi-Regional	5%	0%

Figure 3. Percentages of Monitoring Program Funding Distributed to Each Region since 2000



The following three broad categories of information that are solicited for the Monitoring Program: (1) harvest monitoring, (2) traditional ecological knowledge, and (3) stock status and trends. Projects that combine these approaches are encouraged. Definitions of these three categories of information are listed below.

Harvest monitoring studies provide information on numbers and species of fish harvested, locations of harvests, and gear types used. Methods used to gather information on subsistence harvest patterns may

include harvest calendars, mail-in questionnaires, household interviews, subsistence permit reports, and telephone interviews.

Traditional ecological knowledge studies are investigations of local knowledge directed at collecting and analyzing information on a variety of topics, including: the sociocultural aspects of subsistence, fish ecology, species identification, local names, life history, taxonomy, seasonal movements, harvests, spawning and rearing areas, population trends, environmental observations, and traditional management systems. Methods used to document traditional ecological knowledge include ethnographic fieldwork, key respondent interviews with local experts, place name mapping, and open-ended surveys.

Stock status and trends studies provide information on abundance and run timing; age, size, and sex composition; migration and geographic distribution; survival of juveniles or adults; stock production; genetic stock identification; and mixed stock analyses. Methods used to gather information on stock status and trends include aerial and ground surveys, test fishing, towers, weirs, sonar, video, genetics, mark-recapture, and telemetry.

PROJECT EVALUATION PROCESS

In the current climate of increasing conservation concerns and subsistence needs, it is imperative that the Monitoring Program prioritizes high quality projects that address critical subsistence questions. Projects are selected for funding through an evaluation and review process that is designed to advance projects that are strategically important for the Federal Subsistence Management Program, are technically sound, administratively competent, promote partnerships and capacity building, and are cost effective. Projects are evaluated by a panel called the Technical Review Committee. This committee is a standing interagency committee of senior technical experts that is foundational to the credibility and scientific integrity of the evaluation process for projects funded by the Monitoring Program. The Technical Review Committee reviews, evaluates, and makes recommendations about proposed projects, consistent with the mission of the Monitoring Program. Fisheries and Anthropology staff from the Office of Subsistence Management provide support for the Technical Review Committee. Recommendations from the Technical Review Committee provide the basis for further comments from Subsistence Regional Advisory Councils, the public, the Interagency Staff Committee, and the Federal Subsistence Board, with final approval of the Monitoring Plan by the Assistant Regional Director of the Office of Subsistence Management.

To be considered for funding under the Monitoring Program, a proposed project must have a nexus to Federal subsistence fishery management. Proposed projects must have a direct association to a Federal subsistence fishery, and the subsistence fishery or fish stocks in question must occur in or pass through waters within or adjacent to Federal public lands in Alaska (National Wildlife Refuges, National Forests, National Parks and Preserves, National Conservation Areas, National Wild and Scenic River Systems, National Petroleum Reserves, and National Recreation Areas). A complete project package must be submitted on time and must address the following five specific criteria to be considered a high quality project.

1. ***Strategic Priorities***—Studies should be responsive to information needs identified in the 2020 Priority Information Needs available at the Monitoring Program webpage at https://www.doi.gov/subsistence/frmp/funding. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must summarize project findings in their investigation plans. This summary should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management. Projects should address the following topics to demonstrate links to strategic priorities:

    - Federal jurisdiction—The extent of Federal public waters in or nearby the project area
    - Direct subsistence fisheries management implications
    - Conservation mandate—Threat or risk to conservation of species and populations that support subsistence fisheries
    - Potential impacts on the subsistence priority—Risk that subsistence harvest users' goals will not be met
    - Data gaps—Amount of information available to support subsistence management and how a project answers specific questions related to these gaps
    - Role of the resource—Contribution of a species to a subsistence harvest (number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (cultural value, unique seasonal role)
    - Local concern—Level of user concerns over subsistence harvests (upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics)

2. ***Technical-Scientific Merit***—Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. To demonstrate technical and scientific merit, applicants should describe how projects will:

    - Advance science
    - Answer immediate subsistence management or conservation concerns
    - Have rigorous sampling and/or research designs
    - Have specific, measurable, realistic, clearly stated, and achievable (attainable within the proposed project period) objectives
    - Incorporate traditional knowledge and methods

    Data collection, compilation, analysis, and reporting procedures should be clearly stated. Analytical procedures should be understandable to the non-scientific community. To assist in evaluation of submittals for continuing projects previously funded under the Monitoring

Program, summarize project findings and justify continuation of the project, placing the proposed work in context with the ongoing work being accomplished.

3. ***Investigator Ability and Resources***—Investigators must show they are capable of successfully completing the proposed project by providing information on the ability (training, education, experience, and letters of support) and resources (technical and administrative) they possess to conduct the work. Investigators that have received funding in the past, via the Monitoring Program or other sources, are evaluated and scored on their past performance, including fulfillment of meeting deliverable and financial accountability deadlines. A record of failure to submit reports or delinquent submittal of reports will be taken into account when rating investigator ability and resources.

4. ***Partnership and Capacity Building***—Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development and, ideally, include a strategy to develop capacity building to higher levels, recognizing, however, that in some situations higher level involvement may not be desired or feasible by local organizations.

   Investigators are requested to include a strategy for integrating local capacity development in their study plans or research designs. Investigators should inform communities and regional organizations in the area where work is to be conducted about their project plans, and should also consult and communicate with local communities to ensure that local knowledge is utilized and concerns are addressed. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building. This includes a plan to facilitate and develop partnerships so that investigators, communities, and regional organizations can pursue and achieve the most meaningful level of involvement. Proposals demonstrating multiple, highly collaborative efforts with rural community members or Alaska Native Organizations are encouraged.

   Successful capacity building requires developing trust and dialogue among investigators, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building is a reciprocal process in which all participants share and gain valuable knowledge. The reciprocal nature of the capacity building component(s) should be clearly demonstrated in proposals. Investigators are encouraged to develop the highest level of community and regional collaboration that is practical including joining as co-investigators.

   Capacity can be built by increasing the technical capabilities of rural communities and Alaska Native organizations. This can be accomplished via several methods, including increased technical experience for individuals and the acquisition of necessary gear and equipment. Increased technical experience would include all areas of project management including logistics, financial accountability, implementation, and administration. Other examples may include internships or providing opportunities within the project for outreach, modeling, sampling design,

or project specific training. Another would be the acquisition of equipment that could be transferred to rural communities and tribal organizations upon the conclusion of the project.

A "meaningful partner" is a partner that is actively engaged in one or more aspects of project design, logistics, implementation and reporting requirements. Someone who simply agrees with the concept or provides a cursory look at the proposal is not a meaningful partner.

5. ***Cost/Benefit*—**This criterion evaluates the reasonableness (what a prudent person would pay) of the funding requested to provide benefits to the Federal Subsistence Management Program. Benefits could be tangible or intangible. Examples of tangible outcomes include data sets that directly inform management decisions or fill knowledge gaps and opportunities for youth or local resident involvement in monitoring, research and/or resource management efforts. Examples of possible intangible goals and objectives include enhanced relationships and communications between managers and communities, partnerships and collaborations on critical resource issues, and potential for increased capacity within both communities and agencies.

   Applicants should be aware that the Government shall perform a "best value analysis" and the selection for award shall be made to the applicant whose proposal is most advantageous to the Government. The Office of Subsistence Management strives to maximize program efficiency by encouraging cost sharing, partnerships, and collaboration.

POLICY AND FUNDING GUIDELINES

Several policies have been developed to aid in implementing funding. These policies include:

- Projects of up to four years in duration may be considered
- Proposals requesting Monitoring Program funding that exceeds $215,000.00 in any one year are not eligible for funding
- Studies must not duplicate existing projects
- Long term projects will be considered on a case by case basis

Activities that are not eligible for funding include:

- Habitat protection, mitigation, restoration, and enhancement
- Hatchery propagation, restoration, enhancement, and supplementation
- Contaminant assessment, evaluation, and monitoring
- Projects where the primary or only objective is outreach and education (for example, science camps, technician training, and intern programs), rather than information collection

The rationale behind these policy and funding guidelines is to ensure that existing responsibilities and efforts by government agencies are not duplicated under the Monitoring Program. Land management or regulatory agencies already have direct responsibility, as well as specific programs, to address these activities. However, the Monitoring Program may fund research to determine how these activities affect Federal subsistence fisheries or fishery resources.

The Monitoring Program may fund assessments of key Federal subsistence fishery stocks in decline or that may decline due to climatological, environmental, habitat displacement, or other drivers; however, applicants must show how this knowledge would contribute to Federal subsistence fisheries management. Similarly, the Monitoring Program may legitimately fund projects that assess whether migratory barriers (e.g., falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes, remove beaver dams, or otherwise alter or enhance habitat.

2020 FISHERIES RESOURCE MONITORING PLAN

For 2020, a total of 28 investigation plans were received and all are considered eligible for funding. For 2020, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.5 million in funding statewide for new projects. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided some funding. The amount of U.S. Department of Agriculture funding available for 2020 projects is uncertain.

FISHERIES RESOURCE MONITORING PROGRAM
NORTHERN ALASKA REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, a total of 49 projects have been undertaken in the Northern Alaska Region costing $11.8 million (**Figure 1**). Of these, the State of Alaska received funds to conduct 26 projects, the Department of the Interior conducted 15 projects, Alaska Rural Organizations conducted 5 projects, and other organizations conducted three projects (**Figure 2**). See **Appendix 1** for more information on Northern Alaska Region projects completed since 2000.

Figure 1. Monitoring Program Funds Distributed, by Orginization Type, in the Northern Alaska Region since 2000

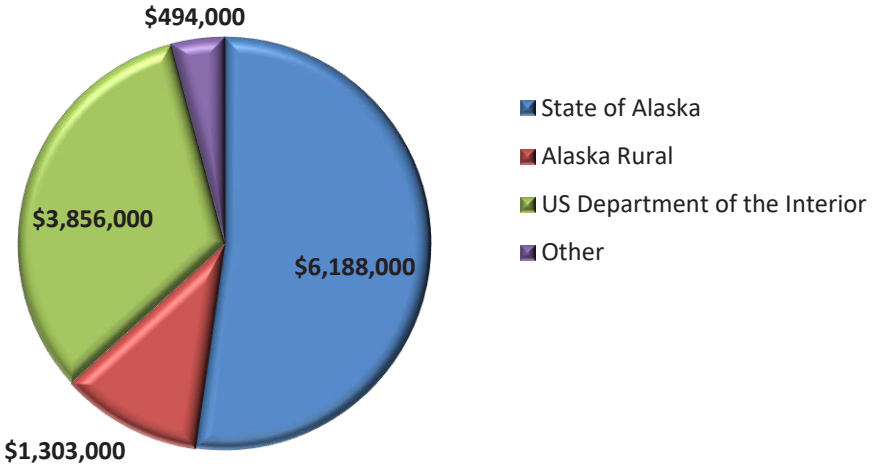
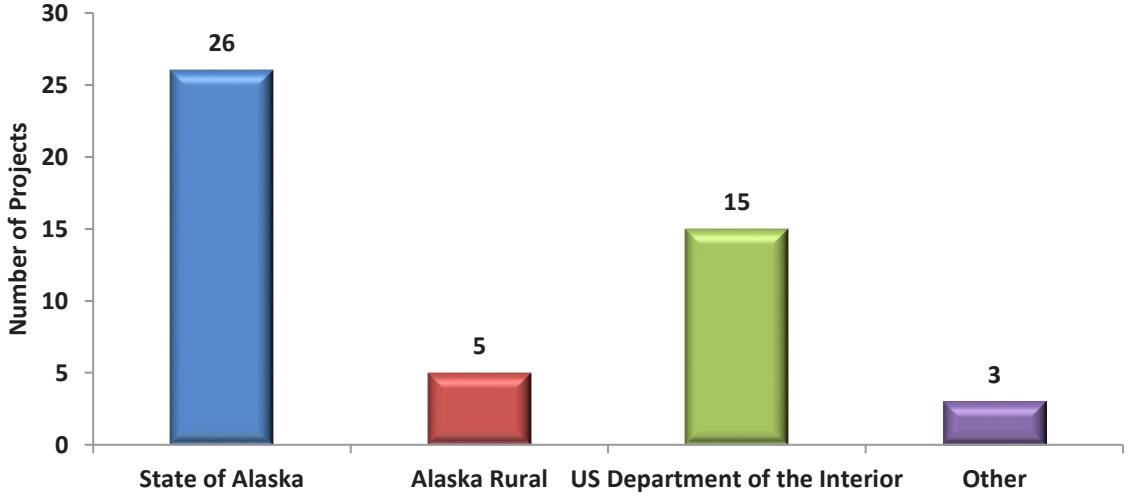


Figure 2. The Number of Monitoring Program Projects Funded, by Organization Type, in the Northern Alaska Region Since 2000



PRIORITY INFORMATION NEEDS

The 2020 Notice of Funding Opportunity for the Northern Alaska Region identified six priority information needs:

- Inventory and baseline data of fish assemblages in major rivers of northern Seward Peninsula tied to subsistence use, including Shishmaref, with the intent to add to the anadromous fish catalog.
- Agiapuk River Chum Salmon abundance estimates for both summer/fall runs.
- Coho Salmon abundance estimates for Pargon, Boston, and Wagon Wheel Rivers.
- Changes in species compositions, abundance, and migration timing, especially of Dolly Varden and whitefish species in the Northwest Arctic, to address changing availability of subsistence fishery resources. When possible, applicants are encouraged to include fisheries proximal to the communities of Kotzebue, Deering, and Noatak.
- The effects of expanding beaver populations and range on subsistence fisheries in the Northwest Arctic. Includes the effects of dams on fish migration and the effects of changes to water quality on fish health.
- Document temporal changes in harvest patterns, resource availability and abundance of Broad Whitefish in the tributaries of Smith Bay and Lake Tusikvoak. Including application to Federal subsistence management, such as identifying critical habitat, refining range maps and understanding ecological relationships. Identify spawning locations of Broad Whitefish in central and western North Slope.

AVAILABLE FUNDS

Federal Subsistence Board guidelines direct initial distribution of funds among regions. Regional budget guidelines provide an initial target for planning. For 2020, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.5 million in funding statewide for new projects in 2020. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided some funding. The amount of U.S. Department of Agriculture funding available for 2020 projects is uncertain.

ROLE OF THE TECHNICAL REVIEW COMMITTEE

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2020 Monitoring Program, four proposals were submitted for the Northern Alaska Region. The Technical Review Committee evaluated and scored each proposal on Strategic Priority, Technical and

Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1**). These scores remain confidential. An executive summary for each proposal submitted to the 2020 Monitoring Program for the Northern Alaska Region is in **Appendix 2**.

Table 1. Projects submitted for the Northern Alaska Region, 2020 Monitoring Program, including total funds requested and average annual funding requests.

Project Number	Title	Total Project Request	Average Annual Request
20-100	Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve	$316,800	$79,200
20-101	Life-history Variability and Mixed-stock Analysis of Dolly Varden in the Noatak River	$246,177	$82,059
20-150	Traditional Ecological Knowledge of Dolly Varden and Whitefish Species in Northwest Alaska	$172,684	$86,342
20-151	Increasing Beaver Activity in Northwest Alaska: Traditional Ecological Knowledge and Geospatial Analysis of Impacts to Subsistence Fish Resources	$486,070	$162,063
	Total	$1,221,731	$409,664

TECHNICAL REVIEW COMMITTEE JUSTIFICATIONS FOR PROJECT SCORES

Project Number: 20-100
Project Title: Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve

Technical Review Committee Justification: This project seeks to document the presence and distribution of important subsistence fish species that utilize Federal public lands/waters in Bering Land Bridge National Preserve (BELA). Information on stock status, species distribution, and population age structure are lacking for this area with many of the major rivers surveyed sporadically, or not at all. This project contains a linkage to Federal public lands/waters for subsistence use as it focuses on the fisheries of BELA. It involves several species of fish harvested by Federally qualified subsistence users and directly addresses a 2020 Priority Information Need: Inventory and baseline data of fish assemblages in major rivers of northern Seward Peninsula tied to subsistence use, including Shishmaref, with the intent to add to the anadromous fish catalog. The proposer intends to identify fish species and habitats within the BELA. The project would then use biological methods to survey for these species. These research objectives would support effective management for several subsistence resources with a focus on salmon. This project proposes to build / increase capacity by using local hire to help with the field sampling, but it does not describe any training that would build capacity. The proposal involves a partnership between State and Federal agencies. The principal investigator provided a letter of support from Native Village of Shishmaref IRA council.

Project Number: 20-101
Project Title: Life-history Variability and Mixed-stock Analysis of Dolly Varden in the Noatak River

TRC Justification: This project seeks to directly address a Northern Alaska Region 2020 Priority Information Need to address the changing availability of Dolly Varden subsistence fishery resources by using otolith microchemistry. Specifically, to determine life-history variability throughout the drainage and compare life-histories of present-day spawners and harvests to fish sampled in the early 1980s. Additionally, genetic analysis will be used to identify the genetic makeup of the harvests of spawning populations of mixed-stocks. The investigative plan draws a clear connection between the importance of the research and management implications for subsistence. Given the backgrounds of the principal investigators and co-investigators, it is likely the project goals and objectives will be achieved and project deliverables submitted in a timely manner. The investigator proposes to hire two locals each year to assist with the in-season collection of fish samples, and an Alaska Science and Engineering student to work in the field and laboratory alongside professional mentors to provide a meaningful internship. Additionally, this project will support a Master of Science thesis student's research at University of Alaska Fairbanks. The investigators have a proven track record and are employed in agencies that have the necessary administrative and technical support, and resources for the successful completion of the project. Each of the investigators is considered an expert in their field including, genetics, stable isotope microchemistry, and research of Arctic fishes. All four of the Principal Investigators have completed Monitoring Program projects in the past and have submitted deliverables on time. The project goals will likely improve our understanding of this complex fish species. Although Dolly Varden are not currently considered to be a species of conservation concern, the changing climate of the Arctic may produce new environmental stressors leaving this species at risk.

Project Number: 20-150
Project Title: Traditional Ecological Knowledge of Dolly Varden and Whitefish Species in Northwest Alaska

Technical Review Committee Justification: This project seeks to address a 2020 Priority Information Need for the Northern Alaska Region, "Changes in species compositions, abundance and migration timing, especially of Dolly Varden and whitefish species in the Northwest Arctic, to address changing availability of subsistence fishery resources." Ms. Mikow has the ability and experience to conduct this project. She would have substantial resources available through her position with the Alaska Department of Fish and Game. Her plan for engaging with communities is well-conceived. However, the proposal does not adequately demonstrate how the planned research activities would address the relevant priority information need; management application is not clearly demonstrated. One letter of support from the National Park Service was provided. There were no letters of support from the communities where the proposed research would be undertaken.

Project Number: 20-151
Project Title: Increasing Beaver Activity in Northwest Alaska: Traditional Ecological Knowledge and Geospatial Analysis of Impacts to Subsistence Fish Resources

Technical Review Committee Justification: This project seeks to document beaver activity over time in the Northwest Arctic for the purpose of evaluating landscape level effects of expanding beaver populations on subsistence fisheries. While the methods proposed appear adequate to document knowledge and concerns regarding beavers, as well as visible landscape effects of beaver dams, the project does not adequately link the resultant data to the effects on subsistence fisheries and only marginally addresses a priority information need. The proposed methods are scientifically sound and proven in achieving the intended results though it is unclear why individual methods were chosen over others. The partnership and capacity components of this proposal are limited. The budget for this project appears reasonable for meeting stated objectives but may be high given the limited applicability to Federal subsistence fishery management outcomes. There is also limited money allocated to local hires. The project leverages resources from a concurrent project and expands the scope of that project significantly. Both project investigators and their associated organizations appear to have substantial experience and resources to make this project successful.

APPENDIX 1
PROJECTS FUNDED IN THE NORTHERN ALASKA REGION SINCE 2000

Project Number	Project Title	Investigators
	North Slope	
00-002	Eastern NS Dolly Varden Spawning and Over-wintering Assessment	ADF&G, USFWS
01-113	Eastern NS Dolly Varden Genetic Stock ID Stock Assessment	ADF&G, USFWS
01-101	Eastern NS (Kaktovik) Subsistence Fish Harvest Assessment	AD&FG, KIC
02-050	NS (Anaktuvuk Pass) Subsistence Fish Harvest Assessment	ADF&G, NSB, AKP
03-012	SST of Arctic Cisco and Dolly Varden in Kaktovik Lagoons	USFWS
04-103	North Slope Dolly Varden Sonar Feasibility	USFWS
06-108	North Slope Dolly Varden Aerial Monitoring	ADF&G
07-105	North Slope Dolly Varden Genetic Baseline Completion	USFWS
07-107	Hulahula River Dolly Varden Sonar Enumeration	USFWS
12-154	North Slope Salmon Fishery HM/TEK	ADF&G
14-103	Beaufort Sea Dolly Varden Dispersal Patterns	UAF
16-101	Arctic Dolly Varden Telemetry	USFWS
16-106	Aerial Monitoring of Dolly Varden Overwintering Abundance	ADF&G, USFWS
16-107[a]	Chandler Lake Trout Abundance Estimation	ADF&G
16-152[b]	Meade River Changes in Subsistence Fisheries	ADF&G
18-100[b]	Colville River Grayling Habitat and Migration	ADF&G

Project Number	Project Title	Investigators
	Northwest Arctic	
00-001	Northwestern Dolly Varden and Arctic Char Stock Identification	ADF&G, USFWS
00-020	Hotham Inlet Kotzebue Winter Subsistence Sheefish Harvest	ADF&G
01-136	Northwestern Alaska Dolly Varden Genetic Diversity	ADF&G, USFWS
01-137	Northwestern Alaska Dolly Varden Spawning Stock Assessment	ADF&G
02-023	Qaluich Nigingnaqtuat: Fish That We Eat	AJ
02-040	Kotzebue Sound Whitefish Traditional Knowledge	ADF&G, MQ
03-016	Selawik River Harvest ID, Spring and Fall Subsistence Fisheries	USFWS
04-101	Selawik River Inconnu Spawning Abundance	USFWS
04-102	Selawik Refuge Whitefish Migration and Habitat Use	USFWS
04-109	Wulik River Dolly Varden Wintering Stocks	USFWS, ADF&G
04-157	Exploring Approaches to Sustainable Fisheries Harvest Assessment	ADF&G, MQ
07-151	Northwest Alaska Subsistence Fish Harvest Patterns and Trends	ADF&G, MQ
08-103	Kobuk River Sheefish Spawning and Run Timing	ADF&G, USFWS
10-100	Selawik Drainage Sheefish Winter Movement Patterns	UAF, USGS, USFWS, NVK
10-104	Hotham Inlet Kotzebue Winter Subsistence Sheefish Harvest	USFWS
10-152	Climate Change and Subsistence Fisheries in Northwest Alaska	UAF
12-100	Selawik River Sheefish Spawning Abundance and Age Structure	USFWS
12-103	Kobuk River Sheefish Spawning Frequency, Location, and Run Timing	ADF&G, USFWS
12-104	Noatak River Dolly Varden Evaluation of Overwintering Populations	ADF&G, NPS
12-153	NW AK Key Subsistence Fisheries Harvest Monitoring Program	ADF&G, MQ
14-104	Selawik R Inconnu Spawning Population Abundance	USFWS
16-103	Kobuk River Dolly Varden Genetics	ADF&G, USFWS
16-104[a]	Selawik Sheefish Age Structure and Spawning Population	USFWS
16-105[b]	Kobuk River Sheefish Abundance	ADF&G
18-101[b]	Kobuk River Dolly Varden Genetic Diversity	ADF&G, USFWS
	Seward Peninsula	
01-224	Nome Sub-district Subsistence Salmon Survey	ADF&G, KI
02-020	Pikmiktalik River Salmon Site Surveys and Enumeration	USFWS, NPS, STB, KI
04-105	Pikmiktalik River Chum and Coho Salmon Enumeration	KI
04-151	Customary Trade of Fish in the Seward Peninsula Area	ADF&G, KI
05-101	Unalakleet River Coho Salmon Distribution and Abundance	ADF&G, NVU
06-101	Pikmiktalik River Chum and Coho Salmon Enumeration	KI
10-102	Unalakleet River Chinook Salmon Abundance Estimate	ADF&G, BLM, NSEDC
10-151	Local Ecological Knowledge of Non-Salmon Fish in the Bering Strait	KI
14-101	Unalakleet River Chinook Salmon Abundance Estimate	NSEDC,NVU
18-103[b]	Unalakleet River Chinook Salmon Escapement Assessment	ADF&G, BLM NSEDC,NVU ADF&G, BLM

Project Number	Project Title	Investigators

a = Final Report in Preparation.
b = On-going projects during 2020.
Abbreviations used for investigators are: **ADF&G** = Alaska Department of Fish and Game, **AJ** = Anore Jones, **AKP** = City of Anaktuvuk Pass, **BLM** = Bureau of Land Management, **KI** = Kawarek Inc., **KIC** = Kaktovik Inupiat Corp., **MQ** = Maniilaq, **NSEDC** = Norton Sound Economic Development Corporation, **NVU** = Native Village of Unalakleet, **NSB** = North Slope Borough, **STB** = Stebbins IRA, **SWCA** = SWCA Environmental Consultants, **UAF** = University Alaska Fairbanks, **USFWS** = U.S. Fish and Wildlife Service, and **USGS** = U.S. Geological Survey.

APPENDIX 2
EXECUTIVE SUMMARIES

The following executive summaries were written by principal investigators and were submitted to the Office of Subsistence Management as part of proposal packages. They may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. Executive summaries may have been altered for length.

Project Number:	20-100
Title:	Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve
Geographic Region:	Northern Alaska Region
Data Type:	Stock Status and Trends
Principal Investigator:	Letty Hughes, National Park Service, Bering Land Bridge National Preserve
Co-investigator:	Nicole Braem M.A., National Park Service, Bering Land Bridge National Preserve Dr. Carol Ann Woody, National Park Service Jenefer Bell M.S., Alaska Department of Fish and Game Tyler Dann M.S., Alaska Department of Fish and Game
Project Cost:	**2020:** $101,700 **2021:** $129,400 **2022: $**82,200 **2023:** $3,500
Total Cost:	$316,800

Issue: We propose to examine fish assemblages within major rivers systems of the Bering Land Bridge National Preserve (BELA) with an emphasis on Pacific salmon (Oncorhynchus spp). Salmon and nonsalmon species are essential subsistence resources to residents living in proximity to BELA. At this time essential baseline information is missing on fish in BELA such as species presence and essential habitat locations, and characteristics critical for salmon success (e.g., spawning, rearing, and feeding areas). No northern Seward Peninsula populations have been included in any genetic population structure analyses, to date, that include this region1,2, leaving a large gap in knowledge. The Federal Office of Subsistence Management identified inventory and baseline data of fish assemblages in major rivers of the

northern Seward Peninsula tied to subsistence use as a priority information need for the 2020 FRMP. This area encompasses most of the Bering Land Bridge National Preserve and includes the past and current subsistence hunting and fishing areas of several federally recognized tribes. Wales, Shishmaref, and Deering are most closely affiliated with the preserve, but residents of other Seward Peninsula communities also make use of fish and wildlife resources within the preserve.

Bering Land Bridge National Preserve's enabling legislation directs the preserve to protect the viability of subsistence resources as well as "manage to protect habitat for, and populations of, fish and wildlife including, but not limited to marine mammals." There is an ethic of stewardship of cultural and natural resources for future generations. None of these management goals can be achieved without adequate data.

Adding to the urgency of this data need are ongoing rapid environmental changes occurring across the Arctic. Ecosystems are changing, noted authors of the 2017 Snow, Water, Ice and Permafrost in Arctic report, and arctic ecosystems will face significant stresses and disruptions3. The science reflects what residents of northern Alaska communities have described for more than a decade: earlier spring breakups and later fall freeze-up, thawing permafrost, reduced thickness of sea ice, increasingly brushy vegetation, drying tundra lakes and erratic weather patterns4. These changes will affect the abundance and distribution of fish and wildlife species that support and sustain subsistence lifeways.

Objectives: The long-term overarching goal is to create a baseline inventory of subsistence fish assemblages, and salmon genetic stock structure in major rivers flowing through BELA. The Project Executive Summary For Bering Land Bridge National Preserve measurable and achievable objectives for this 3-year collaborative field study project will investigate the Serpentine, Nuluk, Arctic, and Nugnugaluktuk rivers to 1) document fish species assemblages, with emphasis on Pacific salmon, 2) evaluate genetic variation within salmon species and potential for mixed stock analysis, and 3) collect age sex, and length (ASL) on salmon species identified and sampled for genetics.

Methods: Three methods of data collection will be used in order to meet the objectives of this study: fish presence baseline, genetic sampling, and age-sex-length (ASL).

Fish Inventory: We will survey primary subsistence rivers and streams to document subsistence fish species presence, distribution and habitats in and near within BELA. For wadeable streams a crew transported by a Robinson R-44 helicopter will visit approximately 30 headwater target sites throughout the study area for a total of 10 field days in July and August over the course of 1 year. Over the course of two years crew will visit approximately 7 unwadeable and main stream sites. Unwadeable streams requires one cataraft crew to be transported by a Bell 206BIII helicopter to visit headwater streams throughout the study area for a total of 10 field days. In rivers and streams fish sampling will be conducted using a backpack electrofishing unit. The unit will be operated by biologists and aided by one technician. Size of sampling reach will be dependent on channel size (small wadeable <12.5 m, medium wadeable 12.5 to 25 m, or large wadeable 25 + m), and fishing will focus on all habitat types in a reach. Stunned fish will be captured in nets and placed in a bucket. Fish stress and mortality will be minimized whenever possible by minimizing handling of fish. GPS coordinates of all survey reaches will be logged,

and characteristics recorded. Beach seins will be deployed from shore when feasible (no large obstructions, shoreline is accessible).

Genetics: Genetic baseline samples will be collected from spawning populations of salmon ranging from each of the four proposed rivers. One hundred genetic samples will be targeted from each species of salmon per proposed river. We will genotype chum salmon for genetic markers common to a regional baseline and assess the population genetic structure of chum salmon in the region. We will evaluate that structure for the potential to use mixed stock analysis to determine local area contributions to mixed stock fisheries.

ASL: Nonsalmon species fork lengths [measured from tip of snout to fork of tail (or to tip of tail, if no fork)] will be measured to the nearest millimeter on all collected & identified fish in wadeable and unwadeable streams. Salmon length will be measured mideye to tail fork (METF), to the nearest 1 mm. Scales will be cleaned of slime and debris, mounted on gummed cards and returned to the ADF&G office in Nome. One scale per fish will be collected on chum salmon; for all other species 3 scales will be collected per salmon. Each year, age and gender of salmon will be summarized by species and river location. The data will be reviewed for patterns of similarity between rivers.

Partnership/Capacity Building: Consultation with Shishmaref IRA Council, residents of Shishmaref, and ADF&G was initiated in August 2018. Residents of Shishmaref have been instrumental in developing the proposed project, providing target areas of study, a willingness to assist with logistics, and the desire to provide a local hire to work on the project. The principal investigator will work with Shishmaref to bring on a local hire for 3-year field season. This project will help develop a broader understanding of northern Seward Peninsula subsistence fisheries and water resources through collaborative partnerships between Shishmaref, BELA, state and federal subsistence management agencies. Building these relationships will provide a timely response to potential changes to current salmon and nonsalmon species in addition to potential new species entering that enter the region as the environment undergoes changes.

Project Number:	20-101
Title:	Life-history Variability and Mixed-stock Analysis of Dolly Varden in the Noatak River
Geographic Region:	Northern Alaska Region
Data Type:	Stock Status and Trends
Principal Investigator:	Philip Joy, Alaska Department of Fish and Game- Sport Fish Division, Fairbanks
Co-investigators:	Andrew Seitz, University of Alaska Fairbanks, College of Fisheries and Ocean Sciences Randy Brown, United States Fish and Wildlife Service, Fairbanks Penny Crane, United States Fish and Wildlife Service, Anchorage
Project Cost:	**2020:** $85,572 **2021:** $80,225 **2022: $**80,380 **2023**: $0
Total Cost:	$246,177

Issue: Dolly Varden (*Salvalinus malma*) in northwest Alaska constitute one of the most important subsistence resources for residents of Noatak, Kivalina, and Kotzebue and Dolly Varden that spawn in the

Noatak River contribute to fishery harvests occurring in Noatak, Kotzebue, and Kivalina. While current harvests appear to be sustainable, managers have little to no information to decide whether or not a subsistence and/or sport fishery should be restricted or liberalized if fisheries change due to changing climate, increased oil and gas exploration, or shifting resource use by locals. The complex life histories of this species coupled with many spawning populations located throughout the Noatak River watershed make management of this species problematic and challenging. There is also limited information on the abundance of Dolly Varden in the Noatak River, but the spawning population is thought to be relatively small at 12-20,000 fish (Scanlon 2011). There is data on life-history traits from the 1980s (DeCicco 1985) and identifying changes in life-history patterns would allow managers to identify shifts in the population structure that may portend problems in the future. For these reasons, gaining a better understanding of basic life-history patterns is critical to understanding the population dynamics of this species and the harvest levels the population can sustain.

The stock composition of the subsistence harvests is also relatively undocumented and understanding which stocks are most critical to subsistence users would allow managers to design cost-effective abundance estimates focusing on a subset of the most important stocks. Given the uncertainty of a rapidly changing climate as well as increased human activities such as transpolar shipping and hydrocarbon exploration and extraction (Reist et al. 2006a; Reist et al. 2006b) it is critical that we gain a better understanding of life-history traits within the drainage and a thorough understanding of the relative importance of the different spawning stocks to the harvest.

This proposal directly speaks to a 2020 priority information need to address the changing availability of Dolly Varden subsistence fishery resources for the Northern Region by, 1) using otolith microchemistry to elucidate life-history variability throughout the drainage and compare the life-history of harvested fish , fish spawning in the lower, middle, and upper Noatak River tributaries, and fish sampled in the early 1980's (DeCicco 1985); and, 2) using mixed-stock analysis (MSA) to identify the genetic make-up of the harvests as it relates to spawning populations.

Objectives: The objectives for this project will be to:

1. Collect life history information for Dolly Varden sampled from the Noatak and Kivalina subsistence harvests and the Kotzebue commercial fishery bycatch harvest, and stock-specific life history information from 9 tributaries from the Noatak River (N=50 per fishery sample and per tributary sample). Life history characteristics to be estimate are:

    a. Age
    b. Age-at-length
    c. Age at first seaward migration
    d. Frequency of seaward migration

2. Estimate the stock proportions of Dolly Varden sampled from the Noatak and Kivalina subsistence harvests and the Kotzebue commercial fishery bycatch harvest in 2020, 2021, and 2022 using mixed-stock analysis with genetic characters (N=200 per fishery sample).

Methods: This project will use otolith microchemistry to examine life-history variability in the drainage and fisheries and compare it to historical data from the 80s to determine if there have been changes in population structure. We will also use genetic samples to determine the stock-of-origin of fish being harvested in subsistence fisheries.

We propose to determine the life-history traits of Dolly Varden sampled from the Noatak and Kivalina subsistence harvests and the Kotzebue commercial fishery in 2020, 2021, and 2022 using otolith chemistry methods similar to Gallagher et al. (2018). We also propose to determine stock specific traits from 9 different tributaries of the Noatak River. Otolith analysis will provide data to estimate the age-of-smolting for fish that survived to maturity, frequency of seaward migration, and age-at-length. Otoliths will be collected from 50 fish from the three fisheries and from the various tributaries.

Mixed-stock analysis will be used to estimate the stock proportions of Dolly Varden sampled from subsistence harvests and as bycatch in the Kotzebue commercial fishery in 2020, 2021, and 2022. Fin clips will be collected from N=200 Dolly Varden from subsistence fisheries in Noatak and Kivalina, and from Dolly Varden bycatch in the Kotzebue commercial fishery in 2020, 2021, and 2022.

Three tributaries per year will be accessed between mid-July and mid-August by a combination of jet boat, raft, and fixed-wing aircraft. In year one, two teams of biologists will sample the Kelly, Kugururok, and Nimiuktuk rivers, in year two biologists will sample the Nakolik and Kaluktavik rivers and the most upper Noatak River Dolly Varden populations in Kavachurak, Lower Kugrak, and Kugrak creeks, and in year three biologists will sample the Eli and Anisak rivers and Evaingiknuk Creek Crews will travel from Kotzebue up the Noatak River in a large inboard-powered jet boat and use small jet-powered rafts to ascend tributaries. A fixed-wing aircraft from Kotzebue will be used to transport crews to more remote locations.

Partnerships and Capacity Development: An ANSEP internship, up to four weeks in duration in August 202-2022, will be available in the CGL. The principal investigator will work closely with local communities to learn about the rivers to be sampled and gain any insight from their knowledge of fish in those areas. Local hires will be employed to sample fish in the Noatak and Kivalina subsistence fisheries with assistance from ADF&G and USFWS biologists and results from this study will be shared with the cooperating communities and the Northwest Alaska RAC.

Project Number:	20-150			
Title:	Traditional Ecological Knowledge of Dolly Varden and Whitefish Species in Northwest Alaska			
Geographic Region:	Northern Alaska Region			
Data Type:	Harvest Monitoring/Traditional Ecological Knowledge			
Principal Investigator:	Elizabeth Mikow, Division of Subsistence, Alaska Department of Fish and Game			
Project Cost:	**2020:** $88,001	**2021:** $84,683	**2022:** $0	**2023:** $0
Total Cost:	$172,684			

Issue: This proposed project addresses a priority information need identified for the Arctic region regarding changes in species composition, abundance, and migration timing of Dolly Varden (scientific name) and whitefish species to address changing availability of subsistence fishery resources (USFWS 2019). Dolly Varden, multiple whitefish species, and sheefish are critical subsistence resources for communities in the Kotzebue District, and the relative importance of these resources is higher in this region compared to many other areas of the state. Based on recent Division of Subsistence harvest assessment projects in 6 Kotzebue District communities, subsistence harvests of whitefish in the region average 74,000 fish annually and harvests of sheefish average well over 10,000 fish. In some Kotzebue area communities, Dolly Varden account for a larger component of total subsistence harvests than salmon and whitefish; since 1991, subsistence harvests in the community of Noatak have ranged from 3,000 to over 11,000 Dolly Varden. Very few biological assessment projects exist for Dolly Varden and sheefish, and there are currently no assessment projects for whitefish in the Kotzebue District (Braem et al. 2017; 2018; Menard et al. 2018). Recent ethnographic information collected by the Division of Subsistence as a part of harvest assessment projects has documented concerns by residents of the Kotzebue District regarding changes to whitefish and Dolly Varden abundance. Building on recently collected harvest assessment and ethnographic information, this project will document Traditional Ecological Knowledge (TEK) information from residents of Deering, Kotzebue, and Noatak. Due to the amount of recent harvest data in the region, this study will focus solely on TEK of Dolly Varden and whitefish species. Key respondent interviews will document observations of fish behavior, health, and abundance. Additionally, interviews will assess the amounts, areas, and means of harvest of key species along with the social and cultural importance of fish resources.

Objectives: There are three objectives for this project:

1. In the communities of Deering, Kotzebue, and Noatak, conduct indepth ethnographic interviews about the TEK of sheefish, whitefish species, and Dolly Varden ecology. Interviews will include questions about a) nonsalmon fish species utilized for subsistence; b) life history/biological information including habitat preferences, spawning & rearing areas, seasonal movements of fish; c) traditional/contemporary harvest methods, including timing of harvest, and gear used; d) observations of fish behavior including seasonal movements, migration timing, spawning and rearing areas, and fish health; e) relative abundance and population trends for key fish species; and f) general observations of environmental change.

2. Map historical and contemporary subsistence harvest locations, observed fish migrations, and other important habitats (spawning, juvenile rearing, etc).

3. Contribute to local capacity building by utilizing a framework of community involvement in research.

Methods: The research will employ standard anthropological data gathering methods of key respondent interviews, participant observation, and mapping to document the TEK of Dolly Varden and whitefish species in northwest Alaska. ADF&G staff will work closely with participating communities to assure effective local participation. As such, tribal governments will serve as project collaborators, supporting the research through tribal resolutions and assisting investigators in local logistics. In each of the study communities local research assistants will be hired to assist with data collection.

Semi-structured interview protocols provide a format for systematically documenting comparable information about the same or an overlapping set of topics in each community while providing flexibility for each key respondent's level of expertise, experience, and focus. Investigators will use a general semi-structured interview guide framed around the topics listed in Objective 2 and developed in consultation with the tribal councils and other knowledgeable community members. The guide may be modified to reflect regional differences along each river, such as variations in resource use or ceremonial life. Davis and Ruddle (2010:891) stress the importance of a systematic methodology for gathering local knowledge, primarily through peer recommendations. In each community, individuals knowledgeable about Dolly Varden and whitefish will be identified using a snowball method to learn about other experts with the assistance of tribal council and other community members (Usher 2000). Researchers will attempt to interview 10 individuals in Deering and Noatak, and, due to the size of the community, 15 individuals in Kotzebue. These sample sizes are based on researchers' previous research experience with the proposed communities and residents' collective subsistence use practices. Because this type of knowledge is likely to be highly specialized, researchers will strive to include all experts with this knowledge without attempting to represent a variety of demographics, including age, gender, and profession.

During interview sessions, key respondents will be asked to map historical and contemporary subsistence harvest areas, as well as historical and contemporary areas of observed fish migration. The temporal focus of these two mapping topics will allow for the documentation of changes to productive areas of harvest as well as any changes to fish abundance and movement in key waterways utilized for subsistence.

Partnerships and Capacity Building: The principal investigator will work with tribal councils in the study communities to hire local project assistants to assist with key respondent interviews and facilitate community meetings. The local research assistants will be trained in ethnographic interview methods. Local research assistants are well positioned to aide in interview data collection due their understanding of the key species harvested by their community as well their knowledge of local geography for mapping sessions. The PI will work with local research assistants to develop a presentation on study results for community review. Working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

Project Number:	20-151
Title:	Increasing Beaver Activity in Northwest Alaska: Traditional Ecological Knowledge and Geospatial Analysis of Impacts to Subsistence Fish Resources
Geographic Region:	Northern Alaska Region
Data Type:	Traditional Ecological Knowledge
Principal Investigator:	Elizabeth Mikow, Division of Subsistence, Alaska Department of Fish and Game

Project Cost:	**2020:** $183,892	**2021:** $179,981	**2022: $**122,197	**2023:** $0
Total Cost:	$486,070			

Issue: Local observations and recent research analyzing satellite imagery has shown that beavers (*Castor canadensis*) have begun to colonize the arctic tundra of northwest Alaska. Residents in communities throughout the northwest Alaska region have expressed concerns about the impacts that beaver dams may have on water quality, fish migration, and fish health. While some ethnographic data exist for this topic in the region (Braem et al. 2015, Braem et al. 2017, Braem at al. 2017b, Brubaker et al. 2011), very little traditional ecological knowledge (TEK) has been documented on on the relationship between fish and beavers in Northwest Alaska to date. Thus, the effects of beaver colonization on the Arctic environment are not understood, but substantial research from the boreal forest and temperate ecosystems indicate likely impacts to fish populations (Kemp et al. 2012; Lokteff et al. 2013; Pollock et al. 2004). This project seeks to 1) document TEK regarding the relationship between expanding beaver populations and subsistence fisheries in Northwest Arctic communities; and 2) collect and analyze quantitative spatial data to characterize beaver range expansion and interaction with the environment.

Objectives:

1) Document TEK related on beaver ecology and impacts to whitefish and salmon migration, habitat, and health will be collected from local experts in Noatak, Kotzebue, Shungnak, and Kobuk. Data collection will include two phases.

During the first phase researchers will 1.) Collect a baseline body of valuable local information and observations of beaver activity on the landscape and impacts to fish behavior, health, and movements, 2.) Generate maps depicting harvest areas for whitefish and salmon species, as well as the presence of beaver activity in the study area, and 3.) Use information collected in interviews to help inform and guide the process of collecting drone imagery and determining placement of game cameras.

During the second phase of data collection, key respondents will be interviewed a second time following spatial imagery analysis. During this phase researchers will 1.) Share satellite imagery and drone/game camera footage with key respondents, as well as maps of harvest areas and known areas of beaver activity gathered during the first phase of data collection and 2.) Conduct semi-structured interviews with key respondents with questions developed during data analysis of both ethnographic and spatial imagery data.

2) Spatial Imagery Analysis:

a) Map regional beaver activity during recent decades in the Upper Kobuk and Lower Noatak (Figure 1), including categorizing dams according to setting (oxbow, stream, spring, etc.) and year of formation.
b) Collect high-resolution satellite and drone imagery to assess visible impacts of beaver activity on the landscape, and to aide discussion of TEK with key local respondents.

Methods: For the TEK component, researchers will identify key respondents by working closely with tribal governments and other knowledgeable individuals in Noatak, Kotzebue, Shungnak, and Kobuk through systematic peer recommendations, a sampling method in which community residents recommend respondents who are then rank-ordered and approached to be interviewed (Davis and Ruddle 2010). Researchers will attempt to interview 10 individuals in Noatak, Shungnak, and Kobuk. Due to the size of Kotzebue, researchers will attempt to interview 15 individuals. These sample sizes are based on researchers' previous research experience with the proposed communities and residents' collective subsistence use practices. Key respondent interviews will be in-depth, semi-structured, and open-ended to enable the researchers to more fully explore some of the key concepts that emerge during the interview process. The first phase will include the collection of baseline TEK of beaver ecology and impacts to fish species, including ethnographic mapping. In the second phase, the same key respondents will be interviewed and researchers will share spatial imagery and ask questions prompted by both spatial and ethnographic data analysis.

For the spatial imagery analysis, researchers will implement a semi-automated workflow that analyzes Landsat imagery time series to identify the formation and disappearance of beaver ponds in Noatak National Preserve, Cape Krusenstern National Monument, and the upper Kobuk River region.). Beaver dam sites will be classified according to their setting on a stream, oxbow, spring, lake outlet, or other feature. Very high resolution imagery of select beaver dam sites (n=3 per community) will be collected in the field using a drone. Imaging will be completed in two communities per year during July/August of each project year, allowing each community to be visited twice during the project. Sites will be accessed by boat by hiring local residents, some who have already been identified, others who will be approached in the initial community meetings. Game cameras will be deployed and downloaded concurrent with the drone imaging. Drone imaging will be analyzed for landscape impacts and aide with TEK discussions; game cameras will illuminate beaver behavior and seasonal events, and will also aide with TEK discussions.

Partnerships and Capacity Building: The principal investigator will work with tribal councils in the study communities to hire local project assistants to assist with key respondent interviews and facilitate community meetings. The local research assistants will be trained in ethnographic interview methods. Local research assistants are well positioned to aide in interview data collection due their understanding of the key species harvested by their community as well their knowledge of local geography for mapping sessions. The PI will work with local research assistants to develop a presentation on study results for community review. Co-PI Tape will also contract local residents of the study area to take staff out in boats to access field sites for drone imaging and game camera deployment. This collaborative effort will allow for valuable knowledge exchanges between local residents and researchers. Working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

ANNUAL REPORTS

Background

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

Report Content

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the Councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

Report Clarity

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

Report Format

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199

FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIR

FOREST SERVICE

SEP 1 2 2019

OSM 190061.KW

Michael Chad Kramer, Chair
Northwest Arctic Subsistence Regional Advisory Council
c/o Office of Subsistence Management
1101 East Tudor Road, MS 121
Anchorage, Alaska 99503-6199

Dear Chairman Kramer:

This letter responds to the Northwest Arctic Subsistence Regional Advisory Council's (Council) fiscal year 2018 Annual Report. The Secretaries of the Interior and Agriculture have delegated to the Federal Subsistence Board (Board) the responsibility to respond to these reports. The Board appreciates your effort in developing the Annual Report. Annual Reports allow the Board to become aware of the issues outside of the regulatory process that affect subsistence users in your region. We value this opportunity to review the issues concerning your region.

1. <u>More research needed to understand wildlife populations and distribution</u>
There needs to be more research to better understand changes in wildlife distribution affecting Federally qualified subsistence users in the Northwest Arctic region. Specifically, the Council identifies the need for research to better understand the distribution and abundance of caribou. Federally qualified subsistence users rely on the Western Arctic Caribou Herd (WACH), which provides an important subsistence resource for many families throughout the region. The availability of research data on caribou distribution and abundance could assist decision makers in managing this important subsistence resource.

Additionally, local observations note the encroachment of beavers in the Northwest Arctic, specifically in areas where the animals have not previously been seen. Beaver lodge and dam construction has been associated with changes in hydrology. Beavers are also associated with changes to water quality potentially affecting human health associated with the spread of the infectious intestinal parasite <u>Giardia lamblia.</u> The availability of research data on beaver distribution and abundance could assist decision makers in managing this resource.

Response:

<u>Caribou</u>
The Board acknowledges the need for more research to better understand and manage wildlife populations in the Northwest Arctic region. However, the WACH is one of the most researched herds in

the world. Current and on-going research and monitoring projects are summarized below. (Note: As these are current research projects, no publications are available, yet). Enclosed with this response is a list of research papers (in chronological order) published about the WACH in the last 15 years.

The Alaska Department of Fish and Game (ADF&G) is currently conducting a calf survival study in response to the WACH population decline. The purpose of the study is to establish a baseline for neonate survival and to evaluate specific causes of mortality. The study began in 2017 and will conclude in 2019. Preliminary results indicate predation as a major cause of mortality.

The National Park Service (NPS) is currently studying annual variability of the WACH calving grounds to determine factors causing shifts in calving locations. Preliminary results indicate that caribou select flat areas with no snow and high plant diversity for calving.

The Wilderness Society is conducting research on potential impacts of proposed road corridors on WACH migration. The objectives of the study include determining features selected or avoided by caribou during migration and determining the effects of roads on caribou migration and on subsistence hunters. Preliminary results indicate caribou avoid roads, dense vegetation, and rugged terrain while migrating.

The environmental consulting firm, ABR, Inc., is conducting an analysis on herd interchange (movement to another herd) and overlap between the WACH, Central Arctic, Teshekpuk, and Porcupine caribou herds. The analysis found interchange from the large WACH and Porcupine herds is uncommon whereas interchange from the smaller Teshekpuk and Central Arctic herds is common. These results suggest population and distribution of smaller caribou herds (i.e. Teshekpuk) can be substantially affected by interchange to another herd. However, interchange on a large herd such as the WACH probably does not have a noticeable effect.

The National Park Service and ADF&G deploy radio-collars every year to monitor WACH abundance and distribution. NPS reports on annual variability of seasonal distribution and migration routes of the WACH are available on their website: https://www.nps.gov/im/arcn/caribou.htm and are titled "Caribou Vital Sign Annual Report for the Artic Network Inventory and Monitoring Program." These reports contain maps depicting seasonal distributions of radio-collared caribou and figures showing migration routes across the Noatak River. Their website also contains information and links to caribou research.

The WACH Working Group's (WACH WG) website is another great resource to learn about and access WACH research: https://westernarcticcaribou.net. The group maintains an annotated bibliography, which cites WACH research papers by topic and includes a brief summary of the research. The group also identifies research priorities for the WACH, and agency personnel consider these priorities when designing new research projects and applying for funding. If the Northwest Arctic Council has additions or modifications to this list, they can consult with the WACH WG by relaying their research priorities to their Council Coordinator, who can notify the WACH WG.

Council members can also express research needs to agency personnel attending the fall and winter Council meetings. Agency personnel have expressed interest and appreciation in hearing from the Northwest Arctic Council on research needs and local observations of the resource.

Beavers

Beavers in the Arctic is a relatively new research topic. The Northwest Arctic Council identified beaver research as a priority information need for the Fisheries Resource Monitoring Program (FRMP), specifically the effects of expanding beaver populations and range on subsistence fisheries in the Northwest Arctic, including the effects of dams on fish migration and the effects of changes to water quality on fish health. Researchers with ADF&G and the University of Alaska-Fairbanks (UAF) submitted a proposal to integrate mapping and Traditional Ecological Knowledge of beavers to better understand the changes occurring. The focal communities for this research are Noatak, Kotzebue, Kobuk, and Shungnak. The Northwest Arctic Council will have an opportunity to discuss this proposal at their fall 2019 meeting.

Tape et al. (2018) examined the recent expansion of beavers into the Arctic and considered its effects. Using satellite imagery, they identified 56 new beaver pond complexes in the Wulik-Kivalina River and Lower Noatak River watersheds since 1999. Beaver ponds increase winter water temperatures and contribute to thawing permafrost, although many biological implications of beavers expanding into the Arctic are unknown.

NPS, UAF, and the U.S. Geological Survey recently received funding to study the effects of beaver range expansion in the Arctic on stream water quality, fish, and permafrost. Field work for the study will begin in summer 2019; study sites include Bering Land Bridge National Preserve, Cape Krusenstern National Monument, and Noatak National Preserve.

The Board highly encourages the Council invites subject matter specialists to talk about this research at the public meetings.

Literature Cited

Tape, K.D., B.M. Jones, C.D. Arp, I. Nitze, G. Grosse. 2018. Tundra be dammed: Beaver colonization of the Arctic. Global Change Biology. 24: 4478-4488.

2. Population data needs for the Western Arctic Caribou Herd

There is a critical need for timely Western Arctic Caribou Herd (WACH) population data. This data is essential to effective management of caribou in the region. The WACH provides meat essential to ensuring the food security needs of Federally qualified subsistence users in the Northwest Arctic Region. Over the past three years, during a decline of the WACH population, the Northwest Arctic Subsistence Regional Advisory Council initiated two special actions and a Federal wildlife regulatory proposal. These actions sought to conserve the WACH while promoting Federal subsistence hunting opportunity consistent with Title VIII of ANILCA. The WACH is a primary resource for all users, yet the Alaska Department of Fish and Game was unable to complete the annual population survey of the WACH in 2018 due to weather conditions. The Council is concerned about the status of the WACH and requests updated and timely population data be provided to the Council.

Response:

The Board recognizes the importance of the WACH to Federally qualified subsistence users in the Northwest Arctic Region. The Alaska Department of Fish and Game (ADF&G) conducts photo censuses of the WACH during the summer when caribou are usually tightly aggregated to avoid insects. However,

in 2018, a cool front reduced insect harassment. Therefore, the caribou did not form large aggregations and were too scattered and dispersed across the landscape to conduct a reliable photo census. The Alaska Department of Fish and Game plans to attempt another photo census in summer 2019.

Photo census data requires extensive processing, but results are usually available by late fall. The Alaska Department of Fish and Game staff attend Northwest Arctic Council meetings and provide the Council with the most recent population data for the WACH. If photo census data is not available by the Northwest Arctic Council's fall 2019 meeting, population data are always presented to the WACH Working Group at their annual meeting in December. This information can be accessed on their website at https://westernarcticcaribou.net.

Please see the Board's response to the topic 1 in this reply for a more thorough overview of WACH research.

3. <u>Disturbances to the lead migration of the Western Arctic Caribou Herd</u>

Over the years, the Council has heard extensive public testimony describing the adverse effects to Federally qualified subsistence users resulting from disturbing the lead migration of the WACH. This behavior is caused by non-local users, who are not aware of or do not respect the local tradition known as "let the leaders pass." It would be helpful if there were convenient ways for locals out in the field to make timely reports of their observations of behavior that disrupts caribou migration. The Council requests support from both State and Federal law enforcement with addressing this persistent problem.

Response:

Disturbance to the lead migration of the WACH long been of concern in both the Northwest Arctic and the North Slope regions of the State. This issue has been brought to the Board's attention for several years, especially in light of declining caribou population numbers. We recognize the importance of allowing lead cow caribou to establish migratory paths and the Board is committed to working with you, our Federal agencies, and partner organizations to continue to try to address this issue. We are pleased to learn that efforts are underway to coordinate information sharing and law enforcement in the Northwest Arctic.

Law enforcement personnel in the Northwest Arctic region recently formed the Northwest Arctic Conservation Law Enforcement Working Group. This group includes representatives from NANA, Alaska Wildlife Troopers, the National Park Service, U.S. Fish and Wildlife Service, and Bureau of Land Management. The group plans to meet four times per year. Its first meeting was held in December 2018 and its second meeting was held in April 2019. The group plans to meet the day before Northwest Arctic Council meetings whenever possible, so they can include the Council in discussions and updates. Representatives from the group presented at the Council's 2019 winter meeting, engaging Council members in discussion and answering questions.

The group will strive to increase community engagement and unify messaging on how to observe and report violations. One initiative of the group is to establish a centralized phone number for law Chairman enforcement issues in the Northwest Arctic. This would reduce confusion regarding who needs to be contacted and what number to call about law enforcement concerns, such as land status and jurisdiction in the region. The group also suggests that the public contact any agency staff to report herd movements.

This will help law enforcement staff focus patrols around lead caribou, when possible. Law enforcement representatives also commented that pictures and videos are very helpful in investigations.

The Board encourages the Council to continue engaging with the Northwest Arctic Conservation Law Enforcement Working Group to address regional law enforcement issues, including disturbances to caribou migration. We look forward to reviewing the effectiveness of this group over time and hope that it can begin to alleviate concerns regarding disturbance to lead cow caribou.

4. Need for updated population data on Dall sheep

The Council has noted concern on the record for the decline in Dall sheep throughout the region. Most of the Dall sheep population is found on National Park Service and State lands. As such, the National Park Service and Alaska Department of Fish and Game need to make it a priority to regularly obtain current Dall sheep population census data for the Northwest Arctic region. The Council requests that reports on the population status be provided at its meetings. Management and recovery of sheep in the Northwest Arctic region could benefit from updated sheep population census data.

Response:

The Board thanks the Council for bringing its concern regarding declining Dall sheep population in the Northwest Arctic Region to its attention. The National Park Service (NPS) regularly surveys Dall sheep populations in the Brooks Range as part of its Arctic Inventory and Monitoring Network (Arctic Network). Surveys of smaller sampling areas, such as the western Baird Mountains, central De Long mountains, and areas surrounding Anaktuvuk Pass, are attempted annually in recent years. Other, larger surveys, such as the one that covers all of Gates of the Arctic National Park and Preserve (GAAR), are attempted approximately every five years. The next survey covering all of the GAAR is scheduled for 2020. Please see the enclosed sheep monitoring summary reports of last year for detailed information on the sizes of various sheep populations in the Brooks Range.

Although the sheep/bear biologist position in the Arctic Network is currently vacant, the NPS still plans to conduct surveys during summer 2019 in the same survey areas as last year. A large survey across all of the GAAR is planned for 2020. Also the Arctic Network is in the process of hiring a new biologist and plans to fill this position by the end of fiscal year 2019. NPS will continue to include available sheep population updates as part of their agency report to the Council.

In closing, I want to thank you and your Council for continued involvement and diligence in matters regarding the Federal Subsistence Management Program. I speak for the entire Board in expressing our appreciation for your efforts and am confident that the subsistence users of the Northwest Arctic Region are well represented through your work.

Sincerely,

Anthony Christianson
Chair

Enclosures

Kramer 6

cc: Federal Subsistence Board
Thomas Doolittle, Acting Assistant Regional Director, Office of Subsistence Management
Thomas Whitford, Acting Deputy Assistant Regional Director
Office of Subsistence Management
Jennifer Hardin, PhD, Subsistence Policy Coordinator, Office of Subsistence Management
Steven Fadden, Acting Council Coordination Division Supervisor,
Office of Subsistence Management
Chris McKee, Wildlife Division Supervisor, Office of Subsistence Management
Greg Risdahl, Fisheries Division Supervisor, Office of Subsistence Management
George Pappas, State Subsistence Liaison, Office of Subsistence Management
Zachary Stevenson, Council Coordinator, Office of Subsistence Management
Northwest Arctic Subsistence Regional Advisory Council
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Project Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

Western Arctic Caribou Herd research papers

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Ecosphere

Delayed spring onset drives declines in abundance and recruitment in a mountain ungulate.

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Appendix S1: Survey details and population estimates for all unpublished Dall's sheep data used in the manuscript. Also included are the annual CSS metrics used in the manuscript.

Table S1. Survey effort information and estimates of Dall's sheep abundance from aerial distance sampling surveys in Western Arctic National Parklands (WEAR), Gates of the Arctic National Park and Preserve (GAAR), Denali National Park and Preserve (DENA), Nabesna subarea of Wrangell St. Elias National Park and Preserve (WRST), and Lake Clark National Park and Preserve (LACL), 2009-2016. Estimates are also shown for subareas of WEAR, GAAR and LACL including the western Baird Mountains (W Baird), Itkillik, and central LACL, respectively. Estimates are shown with 95% Bayesian Credible Intervals and Coefficient of Variation (CV).

Park /Subarea	Year	Survey dates	Transects: Number Completed/Total, Length (km), Grid (km)	Buffer area as % of total area	Observed sheep groups	Observed total sheep	Total Sheep	Adult Sheep	Lambs	Ewe-like Sheep	Total Rams	Small Rams (< full-curl)	Large Rams (≥ full-curl)	Lambs:Ewe-like
WEAR All	2011	7-10 Jul	260/267, 20, 7.5	18%	100	330	2,814 (2,326-3,516) CV=11%	2,226 (1,836-2,823) CV=11%	588 (445-782) CV=15%	1,672 (1,363-2,153) CV=12%	554 (432-739) CV=15%	490 (377-649) CV=16%	64 (41-109) CV=27%	0.35 (0.27-0.46) CV=14%
WEAR All	2014	30 Jun-6 Jul	164/175, 20, 7	19%	30	96	802 (604-1,104) CV=16%	784 (583-1,080) CV=16%	18 (10-35) CV=51%	623 (457-872) CV=16%	161 (97-261) CV=25%	152 (94-250) CV=26%	9 (5-29) CV=85%	0.03 (0.01-0.07) CV=49%
/W Baird	2011	7-10 Jul	43/43, 15, 6	21%	17	96	643 (505-864) CV=14%	524 (413-716) CV=15%	119 (81-183) CV=23%	424 (339-578) CV=15%	100 (67-158) CV=25%	90 (57-144) CV=27%	9 (5-24) CV=60%	0.28 (0.19-0.42) CV=21%
/W Baird	2014	30 Jun-6 Jul	49/49, 15, 6	22%	15	51	350 (253-506) CV=19%	347 (251-500) CV=18%	3 (0-11) CV>100%	299 (228-425) CV=17%	48 (22-100) CV=43%	46 (18-97) CV=44%	2 (0-10) CV>100%	0.01 (0.00-0.05) CV>100%
/W Baird	2015	21,22,27 Jun	62/62, 15, 5.5	29%	8	50	234 (172-329) CV=18%	199 (148-279) CV=18%	35 (24-59) CV=34%	162 (124-219) CV=18%	38 (24-73) CV=34%	36 (24-67) CV=31%	2 (0-11) CV>100%	0.22 (0.13-0.39) CV=31%
/W Baird	2016	2-3 Jul	75/75, 15, 5	33%	13	33	196 (126-309) CV=24%	148 (95-238) CV=25%	47 (25-84) CV=36%	127 (80-207) CV=26%	21 (9-48) CV=51%	13 (6-25) CV=58%	8 (3-26) CV=84%	0.38 (0.19-0.70) CV=35%
GAAR All	2009	23-30 Jun, 22-25 Jul	308/316, 20, 10	12%	146	622	8,766 (7,139-10,930) CV=12%	7,375 (5,968-9,224) CV=12%	1,391 (1,042-1,846) CV=15%	4,992 (4,014-6,353) CV=13%	2,383 (1,859-3,036) CV=13%	1,687 (1,286-2,196) CV=14%	695 (501-946) CV=17%	0.28 (0.22-0.35) CV=12%
GAAR All	2010	6-13 Jul	318/321, 20, 9	14%	214	538	9,313 (7,653-11,280) CV=10%	7,531 (6,154-9,152) CV=11%	1,781 (1,377-2,282) CV=13%	4,821 (3,887-5,977) CV=12%	2,710 (2,160-3,350) CV=12%	1,794 (1,426-2,277) CV=13%	916 (686-1,204) CV=15%	0.37 (0.30-0.46) CV=11%
GAAR All	2015	9-14 Jul	392/392, 20, 9	15%	188	706	6,898 (6,158-7,766) CV=6%	5,526 (4,910-6,244) CV=6%	1,372 (1,178-1,564) CV=9%	3,461 (3,080-3,951) CV=7%	2,065 (1,760-2,419) CV=8%	1,646 (1,394-1,914) CV=9%	419 (322-524) CV=14%	0.40 (0.34-0.47) CV=8%
/Itkillik	2009	23-30 Jun	26/26, 20, 10	13%	32	151	1,759 (1,396-2,258) CV=13%	1,549 (1,238-1,991) CV=13%	210 (126-303) CV=25%	1,235 (1,012-1,556) CV=11%	314 (188-486) CV=25%	244 (157-370) CV=25%	70 (24-141) CV=46%	0.17 (0.11-0.25) CV=22%

/Itkillik	2010	6-13 Jul	32/32, 20, 9	14%	44	72	1,432 (1,055-1,912) CV=16%	1,165 (850-1,573) CV=16%	267 (161-418) CV=25%	775 (550-1,073) CV=18%	390 (250-577) CV=22%	262 (162-408) CV=25%	128 (66-215) CV=31%	0.35 (0.21-0.54) CV=41%
/Itkillik	2011	3-6 Jul	39/39, 20, 8	19%	48	208	1,716 (1,366-2,204) CV=13%	1,277 (1,013-1,664) CV=14%	440 (321-606) CV=18%	929 (735-1,227) CV=15%	348 (246-506) CV=20%	310 (215-465) CV=21%	38 (21-74) CV=38%	0.48 (0.35-0.65) CV=17%
/Itkillik	2012	6-9 Jul	47/54, 15, 6.5	18%	52	162	1,577 (1,154-2,181) CV=17%	1,349 (978-1,880) CV=17%	228 (149-351) CV=23%	1,018 (725-1,454) CV=18%	331 (222-494) CV=22%	289 (190-446) CV=23%	43 (19-85) CV=43%	0.23 (0.15-0.33) CV=20%
/Itkillik	2013	11-14 Jul	40/46, 15, 7.5	14%	31	58	825 (549-1,273) CV=23%	823 (549-1,266) CV=23%	2 (0-15) CV>100%	488 (307-819) CV=27%	335 (211-534) CV=25%	259 (160-450) CV=26%	76 (37-152) CV=43%	0.01 (0.00-0.04) CV>100%
/Itkillik	2014	10,11,20 Jul	38/38, 20, 8	17%	18	39	501 (343-722) CV=20%	448 (301-651) CV=20%	53 (25-100) CV=35%	279 (172-445) CV=26%	169 (107-254) CV=23%	163 (106-248) CV=23%	6 (0-28) CV>100%	0.20 (0.09-0.38) CV=38%
/Itkillik	2015	9-12 Jul	59/59, 15, 6.5	20%	30	82	695 (529-912) CV=14%	590 (453-773) CV=14%	105 (60-174) CV=29%	374 (287-495) CV=15%	216 (145-311) CV=20%	189 (130-271) CV=19%	27 (5-60) CV=54%	0.28 (0.17-0.47) CV=27%
/Itkillik	2016	6-8 Jul	72/73, 15, 6	25%	33	126	840 (643-1,125) CV=15%	639 (478-875) CV=16%	201 (140-298) CV=21%	447 (326-636) CV=18%	192 (130-285) CV=21%	113 (74-177) CV=26%	80 (47-136) CV=29%	0.46 (0.30-0.68) CV=23%
DENA All	2011	20-21 Jul	84/84, 15, 7	18%	56	276	2,288 (1,883-2,839) CV=11%	1,939 (1,588-2,424) CV=11%	349 (251-494) CV=19%	1,140 (925-1,458) CV=12%	799 (616-1,060) CV=14%	589 (446-804) CV=16%	210 (145-313) CV=20%	0.31 (0.22-0.43) CV=18%
DENA All	2015	20-24 Jul, 7 Aug	97/97, 15, 6	21%	33	213	1,374 (1,167-1,655) CV=9%	1,107 (932-1,319) CV=10%	267 (212-352) CV=13%	634 (534-788) CV=10%	473 (375-612) CV=13%	231 (174-309) CV=16%	243 (186-324) CV=16%	0.42 (0.33-0.55) CV=13%
WRST	2010	20-28 Jul	31/31, 20, 9.5	12%	57	266	2,963 (2,435-3,692) CV=11%	2,414 (1,976-3,038) CV=12%	549 (425-724) CV=14%	1,470 (1,131-1,936) CV=14%	944 (768-1,184) CV=11%	672 (526-877) CV=14%	272 (216-351) CV=13%	0.38 (0.29-0.49) CV=14%
/Nabesna	2016	19, 27 Jul	66/85, 15, 6	18%	91	467	3,581 (2,832-4,601) CV=12%	2,962 (2,344-3,841) CV=13%	620 (454-869) CV=17%	1,848 (1,430-2,397) CV=14%	1,114 (841-1,523) CV=15%	820 (599-1,138) CV=17%	293 (192-456) CV=23%	0.34 (0.24-0.46) CV=16%
LACL All	2012	17-20 Jul	145/148, 20, 7x3.5	42%	64	182	726 (564-964) CV=14%	640 (496-857) CV=15%	86 (59-129) CV=21%	400 (302-543) CV=16%	240 (178-348) CV=18%	195 (141-293) CV=20%	46 (28-77) CV=27%	0.22 (0.14-0.31) CV=20%
LACL All	2015	30 Jul-5 Aug	148/148, 20, 4.5	42%	110	315	1,183 (1,023-1,374) CV=8%	945 (813-1,104) CV=8%	238 (193-300) CV=12%	626 (528-734) CV=9%	319 (263-389) CV=10%	224 (180-280) CV=11%	95 (70-130) CV=16%	0.38 (0.30-0.48) CV=12%
/Central	2012	17-20 Jul	55/59, 20, 7x3.5	40%	54	145	589 (469-769) CV=13%	520 (411-685) CV=14%	70 (48-105) CV=20%	333 (261-445) CV=15%	187 (138-266) CV=17%	152 (110-226) CV=19%	35 (21-57) CV=27%	0.21 (0.14-0.31) CV=20%
/Central	2015	31 Jul-5 Aug	57/57, 20, 5	39%	72	197	712 (614-840) CV=8%	569 (485-676) CV=9%	143 (113-183) CV=13%	373 (312-456) CV=10%	196 (160-242) CV=11%	126 (98-162) CV=13%	70 (54-91) CV=14%	0.39 (0.30-0.50) CV=14%

Table S2. Results from aerial minimum count surveys conducted in July in the western Baird Mountains subarea of Western Arctic National Parklands (WEAR), 2005-2009.

Survey methods and units follow Shults (2004).

Year	Area Surveyed (km^2)	% of total area	Total Sheep	Adult sheep	Lambs	Ewe-like Sheep	Total Rams	Small rams (< full-curl)	Large rams (≥ full-curl)	Unclassified Rams	Unclassified Sheep	Lambs: Ewe-like	Rams: Ewe-like	% full-curl/all rams	% full-curl/all sheep
2005[a]	1,585	86%	511	456	55	307	149	120	29	0	0	0.18	0.49	19.5%	5.7%
2006[b]	916	50%	338	283	55	223	60	47	13	0	0	0.25	0.27	21.7%	3.8%
2007[c]	935	51%	480	370	110	306	64	50	14	0	0	0.36	0.21	21.9%	2.9%
2009	1,842	100%	823	656	157	481	175	139	36	4	10	0.33	0.36	20.6%	4.4%

[a] Units surveyed in 2005 included A, B, C, D, E, F, G, H, I, J, L, M, N, O, and the western and northeastern portions of unit K (88 km^2).

[b] Units surveyed in 2006 included A, B, C, D, E, F, I, J, K.

[c] Units surveyed in 2007 included A, C, E, F, H, I, J, L, and the northern portion of unit P (49 km^2).

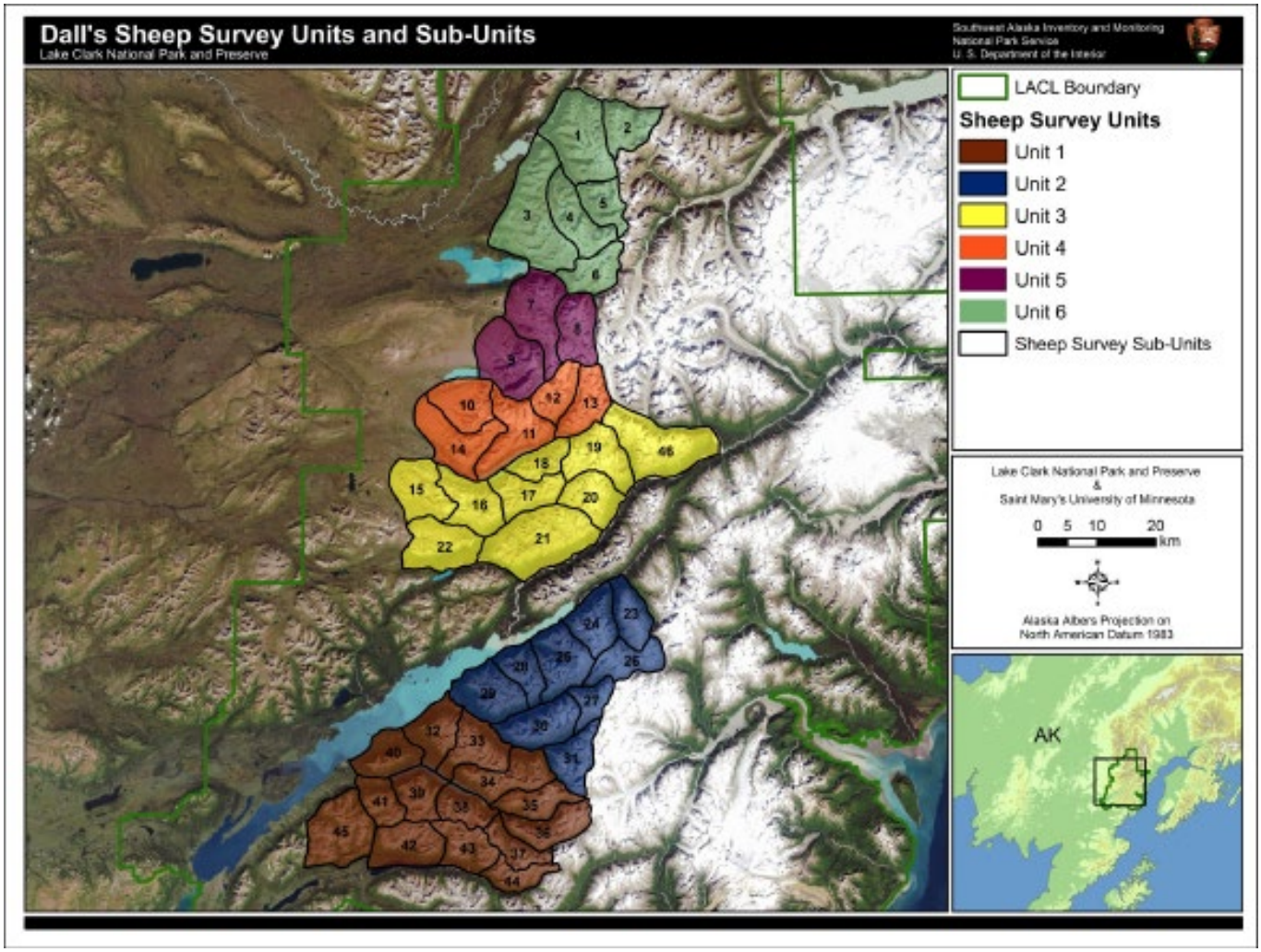
Table S3. Dall's sheep survey data from 12 subunits (24, 25, 28, 29, 32, 33, 34, 39, 40, 41, 42 and 45) in southern Lake Clark National Park and Preserve (LACL), 2003-2013.

Year	Survey dates	Total Sheep	Adult sheep	Lambs	Yearling	Ewe-Like (not including yearlings)	Total Rams	Legal Rams* (3/4 curl)	Unknown	Lambs: Ewe-Like (not including yearlings)	Lambs: Ewe-like (including yearlings)	Ram: Ewe-Like	% Legal Rams* (3/4 curl)
2003	13-20 June	255	208	47	9	132	67	42	0	.36	.33	.51	62.7%
2003	2-4 August	214	189	25	10	104	75	38	0	.24	.25	.72	50.7%
2004	23-26 June	227	198	28	16	127	55	22	1	.22	.20	.43	40.0%
2013	24-31 July	134	112	22	0	75	37	28	0	.29	.29	.49	75.7%

Table S4. End of the continuous snow season (CSS) for the western Baird Mountains (W Baird) in Western Arctic National Parklands (WEAR), Itkillik subarea (Itkillik) in Gates of the Arctic National Park and Preserve (GAAR), Denali National Park and Preserve (DENA), Nabesna subarea of Wrangell St. Elias National Park and Preserve (WRST), and Lake Clark National Park and Preserve (LACL), 2001-2016. Data presented here are the median (1st, 3rd quartile) dates for the end of CSS for each area and year; the median number of days each year deviated from the 2001-2016 median for each area, in italics; and the 2001-2016 median (1st, 3rd quartile) dates for the end of CSS for each area. Ordinal dates are given (e.g., 135 = May 15). The median (1st, 3rd quartile) date is the date that 50% (25%, 75%) of the pixels were snow-free by CSS standards (see Swanson 2014) for that year or for the long-term median for the 2001-2016 period. The deviation is the number of days that 50% of the pixels differed from the long-term median end date; i.e., negative values indicate early snow melt years and positive values indicate late snow melt years.

	W Baird		Itkillik, GAAR		DENA		Nabesna, WRST		LACL	
2001	135 (137, 152)	*10.5*	152 (138, 156)	*12*	143 (115, 154)	*15*	146 (114, 185)	*7*	156 (148, 166)	*13*
2002	137 (135, 141)	*2.5*	138 (132, 142)	*0*	136 (132, 139)	*5.5*	140 (122, 169)	*4*	144 (137, 164)	*0.5*
2003	151 (129, 155)	*13*	156 (151, 163)	*19*	116 (39, 148)	*-4*	144 (116, 164)	*3*	155 (140, 174)	*7*
2004	123 (109, 126)	*-13.5*	136 (125, 140)	*-3*	121 (108, 127)	*-4.5*	126 (115.75, 142)	*-4.5*	135 (124, 156)	*-9*
2005	138 (122, 141)	*0*	123 (119, 133)	*-9.5*	119 (57, 130)	*-1*	121 (114, 154)	*-5.5*	146 (124, 166)	*0*
2006	138 (131, 144)	*3*	135 (127, 152)	*1*	138 (128, 145)	*10.5*	142 (120, 158)	*1.5*	146 (142, 164)	*3*
2007	135 (124, 140)	*-1.5*	136 (112, 141)	*-6*	107 (33, 136.25)	*-12.5*	137 (98, 160)	*-4*	141 (116, 162)	*-7.5*
2008	133 (129, 143)	*0.5*	132 (124, 144)	*-1.5*	137 (128, 151)	*14*	141 (114, 172)	*3*	158 (142, 183)	*12*
2009	137 (123, 142)	*0*	143 (141, 146)	*4.5*	121 (118, 136)	*0*	130 (119, 155)	*1*	133 (122, 144)	*-11*
2010	126 (116, 135)	*-9*	128 (116, 139)	*-9.5*	110 (40, 137)	*-13*	124 (85, 147)	*-7*	146 (128, 158)	*-1.5*
2011	140 (137, 142)	*3.5*	137 (134, 142)	*-0.5*	133 (109, 141)	*1.5*	140 (116, 153)	*1*	145 (132, 163)	*1*
2012	127 (112, 138)	*-6.5*	143 (134, 150)	*4*	137 (114, 144)	*6.5*	150 (110, 193)	*10.5*	157 (139, 173)	*10*
2013	145 (134, 148)	*6*	152 (149, 156)	*15.5*	147 (145, 149)	*19*	146 (142, 154)	*8*	147 (140, 161)	*1*
2014	142 (122, 146)	*3*	148 (132, 160)	*10*	113.5 (29, 133)	*-6.5*	126 (111, 174)	*-0.5*	133 (116, 157)	*-10.5*
2015	130 (130, 135)	*-2*	129 (126, 138)	*-5.5*	116 (79, 132)	*-8.5*	127 (98, 138)	*-9.5*	136 (124, 152)	*-7.5*
2016	115 (106, 127)	*-18*	129 (119, 139)	*-6*	106 (34, 130)	*-13.5*	92 (39, 147)	*-26.5*	147 (122, 166)	*-2*
Median 2001-2016	135 (128.5, 141)		137.5 (128.5, 144)		125 (113, 138.5)		137 (115.5, 159)		146 (132.5, 162.5)	

Figure S1. Dall's sheep minimum count survey units and subunits in Lake Clark National Park and Preserve (LACL). Units 1 and 2 comprise southern LACL and units 3-6 comprise central LACL in the distance sampling survey areas. Map from Zanon et al. (2016).



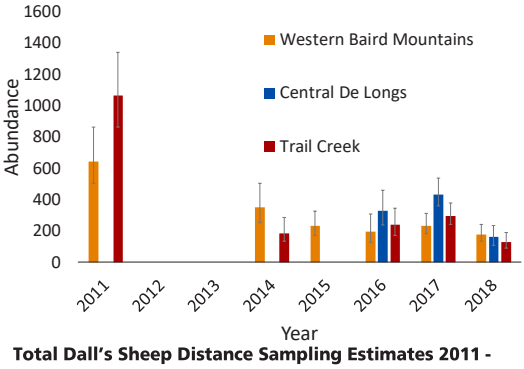
Arctic Network
Inventory & Monitoring Program

National Park Service
U.S. Department of the Interior

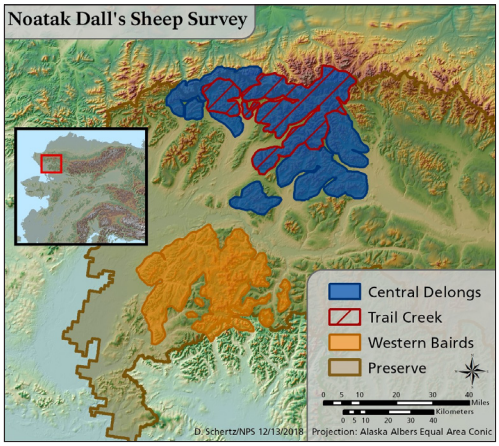
Dall's Sheep – 2018 Survey Summary

Western Arctic Parklands

The National Park Service conducted an aerial survey for Dall's sheep in Noatak National Preserve between July 21st and 27th, 2018. This survey area includes portions of game management units (GMU) 23 and 26A. The survey method uses distance sampling following transects based on elevation contours to estimate the total population. This survey was conducted using two aircraft based out of Kotzebue. In total, 152 out of 188 transects were completed in approximately 54 hours of flight time.



Total Dall's Sheep Distance Sampling Estimates 2011 - 2018 for the Western Bairds, Central Delongs, and Trail Creek subareas within Noatak National Preserve, Alaska. (Above)



2018 Study Areas surveyed for Dall's sheep in Noatak National Preserve. (Above)

When compared with previous years the provisional estimates for the Central Delongs/Trail Creek areas suggest a decline while the Western Bairds are approximately stable. The lamb to ewe-like ratio in all subareas is near average to potentially low. For the full estimate breakdowns see the table (below).

Upcoming surveys: We will continue surveys in these subareas continued through 2020 as part of a region wide study. As part of a five year rotation, in 2019 the survey area will be expanded in both the Delongs and Baird mountains.

Estimates: The provisional estimates for total sheep by subarea are 178 (95% Bayesian Credible Interval: 135 - 244) in the Western Bairds, 161 (95% CI: 110 - 236) in the Central Delongs, and 129 (95% CI: 91 - 192) in the Trail Creek area.

Provisional 2018 Dall's Sheep Estimates for the Western Bairds, Central Delongs, and Trail Creek subareas within Noatak National Preserve, Alaska. (Below)

	Western Bairds		Central Delongs		Trail Creek	
	Mean	95% CI*	Mean	95% CI*	Mean	95% CI*
Total sheep	178	(135 - 244)	161	(110 - 236)	129	(91 - 192)
Adults	160	(124 - 217)	127	(83 - 194)	100	(67 - 156)
Lambs	18	(9 - 39)	34	(23 - 57)	29	(21 - 49)
Lambs:Ewe-like	0.14	(0.06 - 0.30)	0.34	(0.19 – 0.60)	0.38	(0.21 – 0.65)

* 95% CI = 95% Bayesian Credible Intervals

Contact Information: Eric Wald
ARCN Program Manager
(907) 455-0624

4175 Geist Rd
Fairbanks AK 99709
https://www.nps.gov/im/arcn/dallsheep.htm

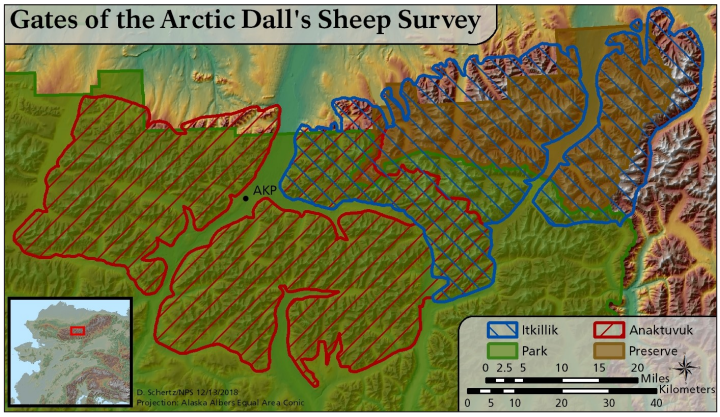
Arctic Network
Inventory & Monitoring Program

National Park Service
U.S. Department of the Interior

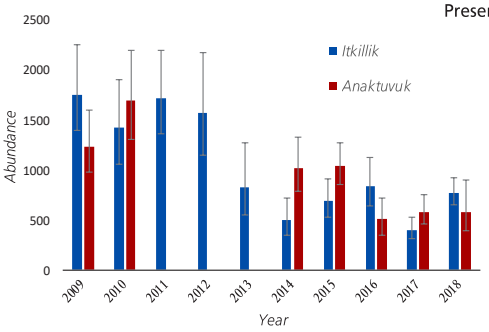
Dall's Sheep – 2018 Survey Summary

Gates of the Arctic National Park and Preserve

The National Park Service conducted an aerial survey for Dall's sheep in Gates of the Arctic National Park and Preserve between July 2nd and 7th, 2018. This survey area includes portions of game management units (GMU) 24A, 24B, 26A, and 26B. The survey method uses distance sampling following transects based on elevation contours to estimate the total population. This survey was conducted using a single aircraft based out of Galbraith Lake.



2018 Study Areas surveyed for Dall's sheep in Gates of the Arctic National Park and Preserve. (Above)



Total Dall's Sheep Distance Sampling Estimates 2009-2018 for the Anaktuvuk and Itkillik subareas within Gates of the Arctic National Park and Preserve, Alaska. (Above)

In total, 136 out of 154 transects were completed in approximately 42 hours of flight time between the Itkillik and Anaktuvuk subareas (See map upper right). **Estimates:** The provisional estimates for total sheep by subarea are 578 (95% Bayesian Credibility Interval: 387 -897) in the Anaktuvuk and 765 (95% CI: 649 – 925) in the Itkillik.

These estimates are approximately stable when compared to the previous couple of years. The lamb to ewe-like ratio in both subareas is approximately average, in the Itkillik, it is potentially low. For the full estimate breakdowns see the table below.

Upcoming surveys: We will continue surveys in these study areas annually because the Itkillik is a long term dataset and the Anaktuvuk has an important subsistence value. As part of a five year rotation in 2020, the survey area will be expanded to cover almost all of Gates of the Arctic National Park.

Provisional 2018 Dall's Sheep Estimates for the Anaktuvuk and Itkillik subareas within Gates of the Arctic National Park and Preserve, Alaska. (Below)

	Itkillik		Anaktuvuk	
	Mean	95% CI*	Mean	95% CI*
Total sheep	765	(649 - 925)	578	(387 - 897)
Adults	645	(544 - 790)	482	(314 - 771)
Lambs	120	(95 - 167)	96	(59 - 166)
Lambs:Ewe-like	0.24	(0.18 – 0.33)	0.39	(0.19 – 0.69)

* 95% CI = 95% Bayesian Credible Intervals

Contact Information: Eric Wald
ARCN Program Manager
(907) 455-0624

4175 Geist Rd
Fairbanks AK 99709
https://www.nps.gov/im/arcn/dallsheep.htm

Alaska Board of Game
P.O. Box 115526
Juneau, AK 99811-5526
(907) 465-4110
www.boardofgame.adfg.alaska.gov

ALASKA BOARD OF GAME
2019/2020 Cycle
Tentative Meeting Dates

Meeting Dates	Topic	Location	Comment Deadline
January 16, 2020 (1 day)	**Work Session**	**Nome**	**TBD**
January 17-20, 2020 (4 days)	**Arctic/Western Region** Game Management Units 18, 22, 23, & 26A	**Nome**	**January 3, 2020**
March 6-14, 2020 (9 days)	**Interior/Northeast Arctic Region** Game Management Units 12, 19, 20, 21, 24, 25, 26B, and 26C	**Fairbanks**	**February 21, 2020**

Total Meeting Days: 15

Agenda Change Request Deadline: Thursday, November 1, 2019
(The Board of Game will meet via teleconference to consider Agenda Change Requests following the November 1 deadline.)

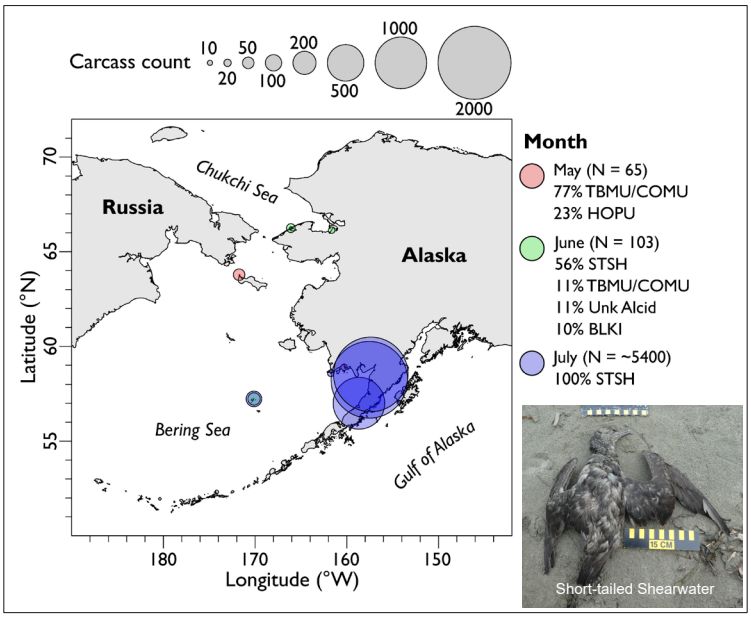
Proposal Deadline: Tuesday, May 1, 2019

February 2019

USFWS Alaska Region, Migratory Bird Management
1011 East Tudor Road, Anchorage AK 99503
Phone: 1-866-527-3358 Email: AK_MBM@fws.gov

U.S. Fish & Wildlife Service

2019 Alaska Seabird Die-off



August 2019

What's Happening?

- Historically, seabird die-offs have occurred occasionally; however, large die-off events have occurred annually in Alaska since 2015, and birds examined were determined to have died due to starvation.
- Beginning in May 2019, reports of dead murres and puffins were received from the northern Bering and Chukchi seas.
- Since late June 2019, we continue to receive reports of an on-going die-off of shearwaters from the Bristol Bay region, including Togiak, Naknek, Egegik, Pilot Point and Port Heiden.

What's Being Done?

- The USFWS is coordinating with federal, state, tribal partners, as well as community members to collect reports and document these mortality events. With help from Alaska Sea Grant, Local Environmental Observation (LEO) Network, Aleut Community of St. Paul Island, and the Coastal Observation and Seabird Survey Team (COASST), we are tracking the number of birds involved, geographic area affected, and duration of the die-off event.
- Seabird carcasses from Shishmaref, Naknek, Pilot Point and Port Heiden were collected and sent to the USGS National Wildlife Health Center for examination and testing. Initial results indicate starvation as the cause of death. Tissues sampled during examination will be analyzed for harmful algal bloom toxins and those results will be shared as they become available.

What Can I Do?

Report observations of sick or dead birds to regional partners:

- **North Slope**: Taqulik Hepa **(907) 852-0350**
- **Northwest Arctic**: Cyrus Harris **(907) 442-7914**
- **Bering Strait Region**: Brandon Ahmasuk **(907) 443-4265**
  Gay Sheffield **(907) 434-1149**
- **Yukon-Kuskokwim Delta**: Jennifer Hooper **(907) 543-7470**
- **Bristol Bay**: Gayla Hoseth **(907) 842-6252**
- **Pribilof Islands**: Lauren Divine **(907) 257-891-3031**
- **Unalaska**: Melissa Good **(907) 581-1876**
- **Aleutians**: Karen Pletnikoff **(907) 222-4286**

Or report by phone or email to the USFWS:
1-866-527-3358 or AK_MBM@FWS.GOV

Information to report includes:

- Location, Time & Date observed
- Size of area observed (e.g. length of beach)
- Type & number of birds (count or estimate)
- Photos of sick/dead birds
- Video of unusual behavior (approachable, drooping wings)

Participate in monitoring efforts on your local beaches:
COASST provides training. Visit www.coasst.org.

Contributing Partners:

Applying for an Alaska Real ID License, Permit or ID Card?

U.S. Citizens, Permanent Residents, Temporary Resident with Lawful Status in the U.S. need the following documents:

DMV Division of MOTOR VEHICLES

To ensure your application process is as smooth as possible, please complete all elements below:

Use the checklist below to ensure that you have the correct documentation before visiting a Driver License office. If you have any questions about what is required, please visit our website at *www.Alaska.gov/DMV*

To be issued an Alaska **Real ID** driver license, permit or ID card, you must prove the following elements: your full legal name, identity, date of birth, lawful status in the United States, social security number, and proof of residential address. Multiple documents may be required to show all name changes.

All documents presented must be unaltered certified originals, certified amended originals, or true copies certified by the issuing agency. Documents **must** be valid and unexpired and may not be laminated. Foreign documents must have certified English translation (DMV Form COFAT.PDF).

If you cannot prove each of the required elements with the documents set forth below, you may be eligible to apply for a standard card. These guidelines may not cover every situation. Knowledge, vision, and/or other eligibility criteria may apply to your individual situation.

Proof of your Name, Identity, Date of Birth, Lawful Status, and Primary Residency:

You can provide any combination of documents that prove the elements (some documents may be used to prove more than one element)

Identity
Name / Date of Birth

- ☐ Valid, unexpired U.S. passport or passport card
- ☐ Certified copy of U.S birth certificate (issued by a city, county, or state vital statistics office)
- ☐ Certified copy of birth certificate from a U.S. Territory. Puerto Rico birth certificates issued on or after July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Unexpired foreign passport with valid U.S. Visa and approved I-94 form
- ☐ Certificate of Naturalization or Certificate of U.S. Citizenship
- ☐ Valid, unexpired I-551 Resident Alien / Permanent Resident Card
- ☐ Valid, unexpired I-766 Employment Authorization Document Card
- ☐ Valid REAL ID license or ID card from a compliant state (Documentation of U.S. citizenship or lawful status is required)

Lawful Status

- ☐ Valid, unexpired U.S. passport or passport card
- ☐ Certified copy of U.S birth certificate (issued by a city, county, or state vital statistics office)
- ☐ Certified copy of birth certificate from a U.S. Territory. Puerto Rico birth certificates issued on or after July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Certificate of Citizenship / Certificate of Naturalization
- ☐ Unexpired foreign passport with valid U.S. Visa and approved I-94 form
- ☐ Refugee/Asylee I-94
- ☐ I-551 Resident Alien / Permanent Resident Card
- ☐ I-766 Employment Authorization Document Card

Name Change

- ☐ Adoption documents that contain the legal name as a result of the adoption
- ☐ Court Certificate of document that contains the legal name both before and after the name change
- ☐ Marriage certificate
- ☐ A certificate, declaration, or registration document verifying the formation of a civil union or domestic partnership
- ☐ Certified Divorce Decree, Dissolution of marriage/civil union/domestic partnership document that contains the legal name as a result of the court action
- ☐ Amended Birth Certificate
- ☐ Certificate of Naturalization/ Certificate of Name Change
- ☐ Certified Court Order That Contains all previous and current Names, and Date of Birth.

SSN
Complete SSN

- ☐ Social security card (not metal)
- ☐ W-2 form
- ☐ Social Security Administration (SSA) 1099 form
- ☐ Non-SSA-1099 form
- ☐ Pay stub
- ☐ I am ineligible for a social security number, a letter from SSA will issued within 90 days be required

Principal Residency
Two documents must be presented and cannot be handwritten. One document must have been issued within 90 days Resident documents may have account numbers and balances redacted.

- ☐ Rental or Lease Agreement with The Signature of The Owner/Landlord and The Tenant/Resident
- ☐ Deed or Title to Residential Real Property
- ☐ Mortgage Document
- ☐ Home Utility Bills (Including Cellular Phone)
- ☐ Employment Documents
- ☐ Insurance Documents, Including Medical, Dental, Vision, Life, Home, Rental and Vehicle
- ☐ Government Issued Tax Document
- ☐ Statement from A Financial Institution/Bank
- ☐ Voter Registration Confirmation Letter or Postcard Issued by The Alaska Division of Elections
- ☐ Proof of Payment of Resident Tuition at A Public Institution of Higher Education in Alaska
- ☐ A Letter on Letterhead from A Homeless Shelter, Shelter for Abused Women, Nonprofit Entity, Faith-Based Organization, Employer or Government Agency Within the United States Attesting That the Applicant Resides in Alaska
- ☐ Alaska Certificate of Vehicle Titles or Registration (Issued At Least 30 Days Prior To The Date of Application)
- ☐ Change of Address Confirmation by The U.S.P.S.
- ☐ 1st Class Mail with Postmark (Mail May Be Handwritten)
- ☐ Alaska Tribal Card (For Non-Standard Remote Alaska Addresses Only, Within the Tribal Area Indicated on The Card)
- ☐ At DMV's Discretion Other Documents May Be Accepted. Please Contact 907-269-5551 For Assistance

The Alaska DMV must electronically verify documents to determine validity and status before Issuance of an ID / Driver License

For Renewals, you may be able to skip the office completely – Go to *ALASKA.GOV/DMV* to see if you are eligible!

(06/19/2019)

Applying for an Alaska Standard License, Permit or ID Card?

U.S. Citizens, Permanent Residents, Temporary Resident with Lawful Status in the U.S. need the following documents:

DMV Division of MOTOR VEHICLES

To ensure your application process is as smooth as possible, please complete all elements below:

Use the checklist below to ensure that you have the correct documentation before visiting a Driver License office. If you have any questions about what is required, please visit our website at *www.Alaska.gov/DMV*.

To be issued a Standard Alaska driver license, permit or ID card, you must prove the following elements: your full legal name, identity, date of birth, lawful status in the United States, social security number, and proof of residential address. Multiple documents may be required to show all name changes.

All documents presented must be unaltered certified originals, certified amended originals, or true copies certified by the issuing agency. Documents must be valid and unexpired and may not be laminated. Foreign documents must have certified English translation (DMV Form COFAT.PDF).

FEDERAL LIMITS APPLY

Proof of your Name, Identity, Date of Birth, Lawful Status and Primary Residency:

You can provide any combination of documents that prove the elements (some docs may be used to prove more than one element)

Identity
Name / Date of Birth

- ☐ Valid, Unexpired U.S. Passport or Passport Card
- ☐ Certified Copy Of U.S Birth Certificate (Issued by A City, County, Or State Vital Statistics Office)
- ☐ Certified Copy of Birth Certificate from A U.S. Territory. Puerto Rico Birth Certificates Issued on Or After July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Unexpired Foreign Passport with Valid U.S. Visa And Approved I-94 Form
- ☐ Certificate of Naturalization or Certificate of U.S. Citizenship
- ☐ Valid, unexpired I-551 Resident Alien / Permanent Resident Card
- ☐ Valid, unexpired I-766 Employment Authorization Document Card
- ☐ Valid REAL ID License or ID Card from A Compliant State, Additional Documentation of U.S. Citizenship or Lawful Status Is Required
- ☐ US Adoption Order W/Birth Information
- ☐ Active or Retired Military ID / Common Access Card

Secondary Identity

- ☐ Any Document in The Previous Column
- ☐ Social Security Card
- ☐ Canadian Tribal Card
- ☐ State Issued Driver License or ID Card That Has NOT Been Expired Over A Year
- ☐ Court Order That Contains the Applicant's Date of Birth
- ☐ Foreign Birth Certificate
- ☐ Health Insurance Card
- ☐ Marriage License or Certificate
- ☐ Individual's Medical Records from A Doctor or A Hospital
- ☐ Military Dependent Identification
- ☐ Military Discharge or Separation Papers (DD214)
- ☐ Gun Permit
- ☐ Pilot's License
- ☐ Certified School Record or Transcript
- ☐ Photographic Government / Employer / School Identification Card
- ☐ Vehicle Title (Must Be Issued 30 Days Prior To Application)
- ☐ Welfare Card
- ☐ Prison Release Document or Photographic Prison Identification Card
- ☐ TWIC Card (Transportation Worker Identification Credential)

Lawful Status

- ☐ U.S. Passport or Passport Card
- ☐ Certified Copy Of U.S Birth Certificate (Issued by A City, County, Or State Vital Statistics Office)
- ☐ Certified Copy of Birth Certificate from A U.S. Territory. Puerto Rico Birth Certificates Issued on Or After July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Certificate of Citizenship / Certificate of Naturalization
- ☐ Unexpired Foreign Passport with Valid U.S. Visa And Approved I-94 Form
- ☐ Refugee/Asylee I-94
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Name Change.

- ☐ Adoption Documents That Contain the Legal Name as A Result of The Adoption
- ☐ Court Certificate of Name Change Document That Contains the Legal Name Both Before and After the Name Change
- ☐ Marriage Certificate
- ☐ A Certificate, Declaration, Or Registration Document Verifying the Formation of a Civil Union or Domestic Partnership
- ☐ Certified Divorce Decree, Dissolution of Marriage/Civil Union/Domestic Partnership Document That Contains the Legal Name as A Result of The Court Action
- ☐ Amended Birth Certificate
- ☐ Certificate of Naturalization/ Certificate of Name Change
- ☐ Certified Court Order That Contains All Previous and Current Names, And Date of Birth.

SSN
Complete SSN

- ☐ SSN On Application Verified By SSA
- ☐ Social Security Card (Not Metal)
- ☐ W-2 Form
- ☐ SSA-1099 Form
- ☐ Non-SSA-1099 Form
- ☐ Pay Stub
- ☐ I Am Ineligible for A Social Security Number, A Letter from SSA Issued Within 90 Days Will Be Required

Principal Residency
(Cannot Be Handwritten)

- ☐ Rental or Lease Agreement with The Signature of The Owner/Landlord and The Tenant/Resident
- ☐ Deed or Title to Residential Real Property
- ☐ Mortgage Document
- ☐ Home Utility Bills (Including Cellular Phone)
- ☐ Employment Documents
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- ☐ Alaska Certificate of Vehicle Titles or Registration (Issued At Least 30 Days Prior To The Date of Application)
- ☐ Change of Address Confirmation by The U.S.P.S.
- ☐ 1st Class Mail with Postmark (Mail May Be Handwritten)
- ☐ Alaska Tribal Card (For Non-Standard Remote Alaska Addresses Only, Within the Tribal Area Indicated on The Card)
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(06/19/2019)

Winter 2020 Regional Advisory Council Meeting Calendar

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Feb. 2	*Feb. 3* *Window Opens*	*Feb. 4* **BB — Naknek**	*Feb. 5*	*Feb. 6*	*Feb. 7*	*Feb. 8*
Feb. 9	*Feb. 10*	*Feb. 11* **YKD — Bethel** **WI — Fairbanks**	*Feb. 12*	*Feb. 13*	*Feb. 14*	*Feb. 15*
Feb. 16	*Feb. 17* ***PRESIDENT'S DAY*** ***HOLIDAY***	*Feb. 18*	*Feb. 19* **NS — Utqiaġvik**	*Feb. 20* **NWA — Kotzebue**	*Feb. 21*	*Feb. 22*
Feb. 23	*Feb. 24*	*Feb. 25* **SE — Petersburg**	*Feb. 26*	*Feb. 27* **KA — Kodiak**	*Feb. 28*	*Feb. 29*
Mar. 1	*Mar. 2*	*Mar. 3* **EI — Fairbanks**	*Mar. 4* **SC — Anchorage**	*Mar. 5*	*Mar. 6*	*Mar. 7*
Mar. 8	*Mar. 9*	*Mar. 10*	*Mar. 11* **SP — Nome**	*Mar. 12*	*Mar. 13* *Window Closes*	*Mar. 14*

Fall 2020 Regional Advisory Council Meeting Calendar

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 16	*Aug. 17 Window opens*	*Aug. 18*	*Aug. 19*	*Aug. 20*	*Aug. 21*	*Aug. 22*
Aug. 23	*Aug. 24*	*Aug. 25*	*Aug. 26*	*Aug. 27*	*Aug. 28*	*Aug. 29*
Aug. 30	*Aug. 31*	*Sep. 1*	*Sep. 2*	*Sep. 3*	*Sep. 4*	*Sep. 5*
Sep. 6	*Sep. 7* **LABOR DAY HOLIDAY**	*Sep. 8*	*Sep. 9*	*Sep. 10*	*Sep. 11*	*Sep. 12*
Sep. 13	*Sep. 14*	*Sep. 15*	*Sep. 16*	*Sep. 17*	*Sep. 18*	*Sep. 19*
Sep. 20	*Sep. 21*	*Sep. 22*	*Sep. 23*	*Sep. 24*	*Sep. 25*	*Sep. 26*
Sep. 27	*Sep. 28*	*Sep. 29*	*Sep. 30*	*Oct. 1*	*Oct. 2*	*Oct. 3*
Oct. 4	*Oct. 5*	*Oct. 6*	*Oct. 7*	*Oct. 8*	*Oct. 9*	*Oct. 10*
Oct. 11	*Oct. 12* **COLUMBUS DAY HOLIDAY**	*Oct. 13*	*Oct. 14*	*Oct. 15*	*Oct. 16*	*Oct. 17*
Oct. 18	*Oct. 19*	*Oct. 20*	*Oct. 21*	*Oct. 22*	*Oct. 23*	*Oct. 24*
Oct. 25	*Oct. 26*	*Oct. 27*	*Oct. 28*	*Oct. 29*	*Oct. 30*	*Oct. 31*
Nov. 1	*Nov. 2*	*Nov. 3*	*Nov. 4*	*Nov. 5*	*Nov. 6 Window closes*	*Nov. 7*

Subsistence Regional Advisory Council Correspondence Policy

The Federal Subsistence Board (Board) recognizes the value of the Regional Advisory Councils' role in the Federal Subsistence Management Program. The Board realizes that the Councils must interact with fish and wildlife resource agencies, organizations, and the public as part of their official duties, and that this interaction may include correspondence. Since the beginning of the Federal Subsistence Program, Regional Advisory Councils have prepared correspondence to entities other than the Board. Informally, Councils were asked to provide drafts of correspondence to the Office of Subsistence Management (OSM) for review prior to mailing. Recently, the Board was asked to clarify its position regarding Council correspondence. This policy is intended to formalize guidance from the Board to the Regional Advisory Councils in preparing correspondence.

The Board is mindful of its obligation to provide the Regional Advisory Councils with clear operating guidelines and policies, and has approved the correspondence policy set out below. The intent of the Regional Advisory Council correspondence policy is to ensure that Councils are able to correspond appropriately with other entities. In addition, the correspondence policy will assist Councils in directing their concerns to others most effectively and forestall any breach of department policy.

The Alaska National Interest Lands Conservation Act, Title VIII required the creation of Alaska's Subsistence Regional Advisory Councils to serve as advisors to the Secretary of the Interior and the Secretary of Agriculture and to provide meaningful local participation in the management of fish and wildlife resources on Federal public lands. Within the framework of Title VIII and the Federal Advisory Committee Act, Congress assigned specific powers and duties to the Regional Advisory Councils. These are also reflected in the Councils' charters. *(Reference: ANILCA Title VIII §805, §808, and §810; Implementing regulations for Title VIII, 50 CFR 100 _.11 and 36 CFR 242 _.11; Implementing regulations for FACA, 41 CFR Part 102-3.70 and 3.75)*

The Secretaries of Interior and Agriculture created the Federal Subsistence Board and delegated to it the responsibility for managing fish and wildlife resources on Federal public lands. The Board was also given the duty of establishing rules and procedures for the operation of the Regional Advisory Councils. The Office of Subsistence Management was established within the Federal Subsistence Management Program's lead agency, the U.S. Fish and Wildlife Service, to administer the Program. *(Reference: 36 CFR Part 242 and 50 CFR Part 100 Subparts C and D)*

Policy

1. The subject matter of Council correspondence shall be limited to matters over which the Council has authority under §805(a)(3), §808, §810 of Title VIII, Subpart B §___.11(c) of regulation, and as described in the Council charters.

2. Councils may, and are encouraged to, correspond directly with the Board. The Councils are advisors to the Board.

3. Councils are urged to also make use of the annual report process to bring matters to the Board’s attention.

4. As a general rule, Councils discuss and agree upon proposed correspondence during a public meeting. Occasionally, a Council chair may be requested to write a letter when it is not feasible to wait until a public Council meeting. In such cases, the content of the letter shall be limited to the known position of the Council as discussed in previous Council meetings.

5. Except as noted in Items 6, 7, and 8 of this policy, Councils will transmit all correspondence to the Assistant Regional Director (ARD) of OSM for review prior to mailing. This includes, but is not limited to, letters of support, resolutions, letters offering comment or recommendations, and any other correspondence to any government agency or any tribal or private organization or individual.
    a. Recognizing that such correspondence is the result of an official Council action and may be urgent, the ARD will respond in a timely manner.
    b. Modifications identified as necessary by the ARD will be discussed with the Council chair. Councils will make the modifications before sending out the correspondence.

6. Councils may submit written comments requested by Federal land management agencies under ANILCA §810 or requested by regional Subsistence Resource Commissions (SRC) under §808 directly to the requesting agency. Section 808 correspondence includes comments and information solicited by the SRCs and notification of appointment by the Council to an SRC.

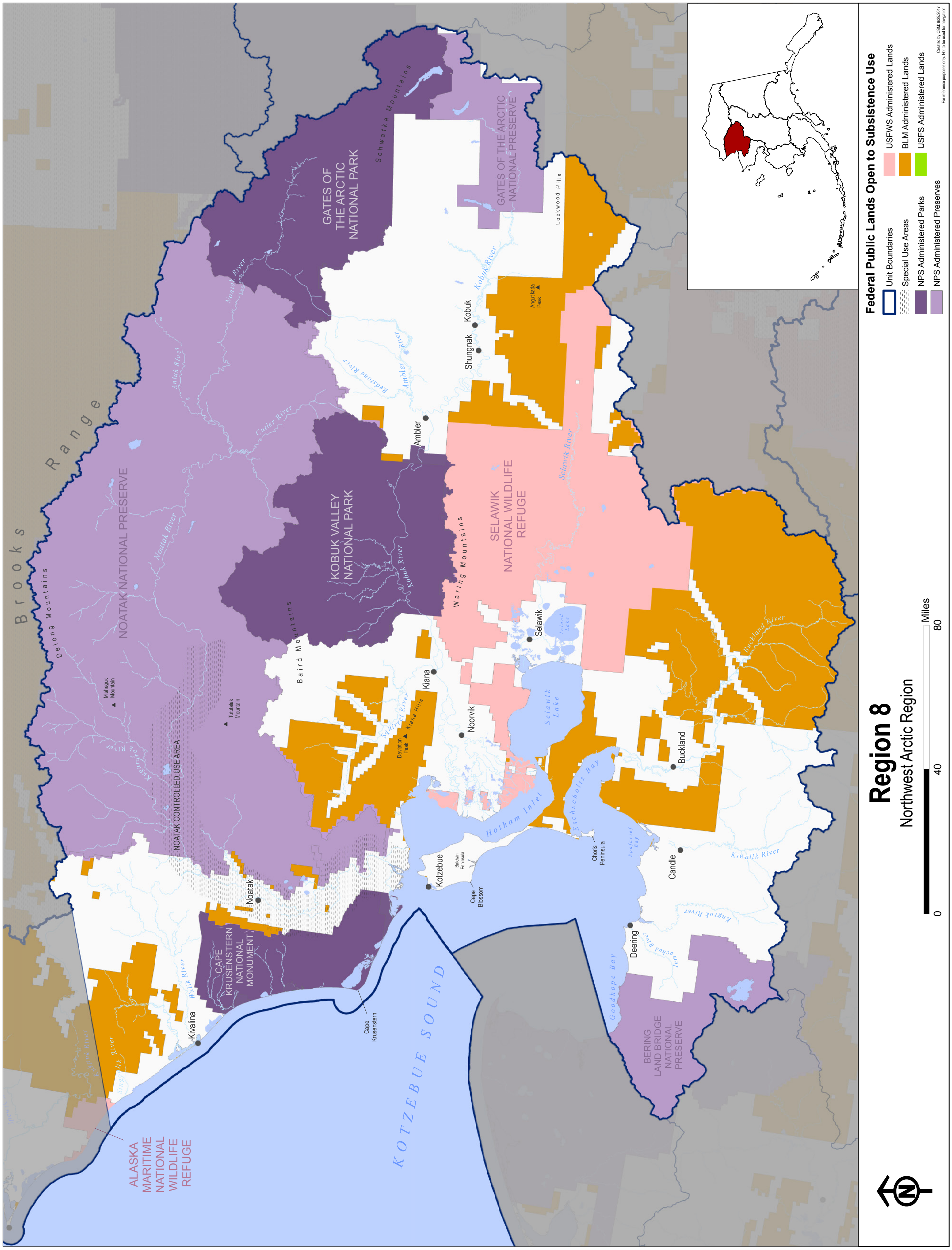
7. Councils may submit proposed regulatory changes or written comments regarding proposed regulatory changes affecting subsistence uses within their regions to the Alaska Board of Fisheries or the Alaska Board of Game directly. A copy of any comments or proposals will be forwarded to the ARD when the original is submitted.

8. Administrative correspondence such as letters of appreciation, requests for agency reports at Council meetings, and cover letters for meeting agendas will go through the Council's regional coordinator to the appropriate OSM division chief for review.

9. Councils will submit copies of all correspondence generated by and received by them to OSM to be filed in the administrative record system.

10. Except as noted in Items 6, 7, and 8, Councils or individual Council members acting on behalf of or as representative of the Council may not, through correspondence or any other means of communication, attempt to persuade any elected or appointed political officials, any government agency, or any tribal or private organization or individual to take a particular action on an issue. This does not prohibit Council members from acting in their capacity as private citizens or through other organizations with which they are affiliated.

Approved by the Federal Subsistence Board on June 15, 2004.


Federal Public Lands Open to Subsistence Use
Unit Boundaries
Special Use Areas
NPS Administered Parks
NPS Administered Preserves
USFWS Administered Lands
BLM Administered Lands
USFS Administered Lands
Region 8
Northwest Arctic Region
Miles
0
40
80
GATES OF THE ARCTIC NATIONAL PARK
GATES OF THE ARCTIC NATIONAL PRESERVE
NOATAK NATIONAL PRESERVE
KOBUK VALLEY NATIONAL PARK
SELAWIK NATIONAL WILDLIFE REFUGE
NOATAK CONTROLLED USE AREA
CAPE KRUSENSTERN NATIONAL MONUMENT
BERING LAND BRIDGE NATIONAL PRESERVE
ALASKA MARITIME NATIONAL WILDLIFE REFUGE
KOTZEBUE SOUND
Brooks Range
Schwatka Mountains
Delong Mountains
Baird Mountains
Waring Mountains
Lockwood Hills
Kobuk
Shungnak
Ambler
Kiana
Noorvik
Selawik
Buckland
Kotzebue
Noatak
Kivalina
Candle
Deering
Cape Krusenstern
Cape Blossom
Choris Peninsula
Hotham Inlet
Eschscholtz Bay
Goodhope Bay
Selawik Lake
Noatak River
Kobuk River
Selawik River
Buckland River
Kiwalik River
Squirrel River
Redstone River
Ambler River
Cutler River
Wulik River

Department of the Interior
U. S. Fish and Wildlife Service

Northwest Arctic Subsistence Regional Advisory Council

Charter

1. **Committee's Official Designation.** The Council's official designation is the Northwest Arctic Subsistence Regional Advisory Council (Council).

2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3115 (1988)), and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is regulated by the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. Appendix 2.

3. **Objectives and Scope of Activities.** The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.

4. **Description of Duties.** Council duties and responsibilities, where applicable, are as follows:

    a. Recommend the initiation of, review, and evaluate proposals for regulations, policies, management plans, and other matters relating to subsistence uses of fish and wildlife on public lands within the Region.

    b. Provide a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife on public lands within the Region.

    c. Encourage local and regional participation in the decision-making process affecting the taking of fish and wildlife on the public lands within the Region for subsistence uses.

    d. Prepare an annual report to the Secretary containing the following:

        (1) An identification of current and anticipated subsistence uses of fish and wildlife populations within the Region.

        (2) An evaluation of current and anticipated subsistence needs for fish and wildlife populations within the Region.

(3) A recommended strategy for the management of fish and wildlife populations within the Region to accommodate such subsistence uses and needs.

(4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

e. Appoint three members to each of the Cape Krusenstern National Monument and the Kobuk Valley National Park Subsistence Resource Commissions and one member to the Gates of the Arctic National Park Subsistence Resource Commission in accordance with Section 808 of ANILCA.

f. Make recommendations on determinations of customary and traditional use of subsistence resources.

g. Make recommendations on determinations of rural status.

h. Provide recommendations on the establishment and membership of Federal local advisory committees.

i. Provide recommendations for implementation of Secretary's Order 3347: Conservation Stewardship and Outdoor Recreation, and Secretary's Order 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories. Recommendations shall include, but are not limited to:

(1) Assessing and quantifying implementation of the Secretary's Orders, and recommendations to enhance and expand their implementation as identified;

(2) Policies and programs that:

(a) increase outdoor recreation opportunities for all Americans, with a focus on engaging youth, veterans, minorities, and other communities that traditionally have low participation in outdoor recreation;

(b) expand access for hunting and fishing on Bureau of Land Management, U.S. Fish and Wildlife Service and National Park Service lands in a manner that respects the rights and privacy of the owners of non-public lands;

(c) increase energy, transmission, infrastructure, or other relevant projects while avoiding or minimizing potential negative impacts on wildlife; and

(d) create greater collaboration with states, tribes, and/or territories.

j. Provide recommendations for implementation of the regulatory reform initiatives and policies specified in section 2 of Executive Order 13777: Reducing Regulation and Controlling Regulatory Costs; Executive Order 12866: Regulatory Planning and Review, as amended; and section 6 of Executive Order 13563: Improving Regulation and Regulatory Review. Recommendations shall include, but are not limited to:

Identifying regulations for repeal, replacement, or modification considering, at a minimum, those regulations that:

(1) eliminate jobs, or inhibit job creation;

(2) are outdated, unnecessary, or ineffective;

(3) impose costs that exceed benefits;

(4) create a serious inconsistency or otherwise interfere with regulatory reform initiative and policies;

(5) rely, in part or in whole, on data or methods that are not publicly available or insufficiently transparent to meet the standard for reproducibility; or

(6) derive from or implement Executive Orders or other Presidential and Secretarial directives that have been subsequently rescinded or substantially modified.

At the conclusion of each meeting or shortly thereafter, provide a detailed recommendation meeting report, including meeting minutes, to the Designated Federal Officer (DFO).

5. **Agency or Official to Whom the Council Reports.** The Council reports to the Federal Subsistence Board Chair, who is appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture.

6. **Support.** The U.S. Fish and Wildlife Service will provide administrative support for the activities of the Council through the Office of Subsistence Management.

7. **Estimated Annual Operating Costs and Staff Years**. The annual operating costs associated with supporting the Council's functions are estimated to be $150,000, including all direct and indirect expenses and 1.0 staff years.

8. **Designated Federal Officer.** The DFO is the Subsistence Council Coordinator for the Region or such other Federal employee as may be designated by the Assistant Regional Director – Subsistence, Region 7, U.S. Fish and Wildlife Service. The DFO is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will:

   (a) Approve or call all of the advisory committee's and subcommittees' meetings;

   (b) Prepare and approve all meeting agendas;

   (c) Attend all committee and subcommittee meetings;

   (d) Adjourn any meeting when the DFO determines adjournment to be in the public interest; and

   (e) Chair meetings when directed to do so by the official to whom the advisory committee reports.

9. **Estimated Number and Frequency of Meetings.** The Council will meet 1-2 times per year, and at such times as designated by the Federal Subsistence Board Chair or the DFO.

10. **Duration.** Continuing

11. **Termination.** The Council will be inactive 2 years from the date the Charter is filed, unless, prior to that date, it is renewed in accordance with the provisions of section 14 of the FACA. The Council will not meet or take any action without a valid current charter.

12. **Membership and Designation.** The Council's membership is composed of representative members as follows:

    Ten members who are knowledgeable and experienced in matters relating to subsistence uses of fish and wildlife and who are residents of the Region represented by the Council. To ensure that each Council represents a diversity of interests, the Federal Subsistence Board in their nomination recommendations to the Secretary will strive to ensure that seven of the members (70 percent) represent subsistence interests within the Region and three of the members (30 percent) represent commercial and sport interests within the Region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

    The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

Members will be appointed for 3-year terms. A vacancy on the Council will be filled in the same manner in which the original appointment was made. Members serve at the discretion of the Secretary.

Council members will elect a Chair, Vice-Chair, and Secretary for a 1-year term.

Members of the Council will serve without compensation. However, while away from their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under section 5703 of title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any Council or subcommittee deliberations or votes relating to a specific party matter before the Department or its bureaus and offices including a lease, license, permit, contract, grant, claim, agreement, or litigation in which the member or the entity the member represents has a direct financial interest.

14. **Subcommittees.** Subject to the DFOs approval, subcommittees may be formed for the purpose of compiling information and conducting research. However, such subcommittees must act only under the direction of the DFO and must report their ·ide recommendations to the full Council for consideration. Subcommittees must not provide advice or work products directly to the Agency. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.

15. **Recordkeeping.** Records of the Council, and formally and informally established subcommittees or other subgroups of the Council, shall be handled in accordance with General Records Schedule 6.2, and other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

Secretary of the Interior

DEC 0 1 2017

Date Signed

DEC 0 4 2017

Date Filed

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